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MINISTRY OF AGRICULTURE

MONTHLY REPORT

NOVEMBER, 1938

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GOVERNMENT OF NORTHERN IRELAND
MINISTRY OF AGRICULTURE

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MINISTRY OF AGRICULTURE

MONTHLY REPORT

NOVEMBER, 1938.

Dull and damp weather continues to depress the general outlook. This is unfortunately only too evident on farms in the late districts where the spectacle of grain crops still in the fields and exposed to the elements is not a pleasant one, and with the lifting of potatoes in a very backward state, the fears of considerable losses occurring in the case of these crops are increasing every day as the extremely wet weather continues.

The general agricultural trade position is also unsatisfactory, but there is some comfort to be gained from the fact that the downward trend in commodity prices has been arrested, and doubtless, this will soon have favourable reactions on agricultural prices. Prices for the new season's crops have so far been disappointing, and there is room for a general improvement.

In regard to potatoes, in particular, the future outlook is perhaps even less satisfactory than at this time last year. Particulars of the position respecting supplies are given in the special article on this crop on page 358; similarly, an effort is made in the article on page 361 to guide producers catering for the Christmas poultry trade. Those readers who missed hearing Mr. Morrison's broadcast talk on "Pig Breeding and Management" at the beginning of October, will be able to study it in pages 364 to 367.

AGRICULTURAL CONDITIONS.

AGRICULTURAL CONDITIONS AT 1st NOVEMBER, 1938.

With extremely wet and stormy weather prevailing throughout the past month outdoor work on the farm was almost at a standstill. The incessant heavy rains caused a considerable amount of flooding and made the land waterlogged, so that even potato digging and ploughing were delayed.

The lifting of the potato crop was seriously impeded, and only slight progress was possible in a few light soil areas; elsewhere the ground being too sodden for this work. It is estimated that more than half of the entire area of main crop potatoes still remains to be dug. Ploughing operations were held up generally, but a start was made on a small scale in a few of the earlier districts, and some fields of winter wheat were sown.

The most serious consequences of the exceptionally wet conditions were felt on those farms where the harvesting of the oat crop had still to be completed at the end of September. In this connection it may be mentioned that the bulk of this crop was in stooks or in huts when the weather broke at mid-September, and since then the unfavourable weather has prevented the work of stacking being completed. In the late districts, where a considerable proportion of the crop still remains in the fields, much damage has been done by the rainstorms of last month, and it is feared that even if stacking is possible soon the quality of the grain will be seriously impaired. The potato crop also will have suffered loss from rotting, especially in the heavy soil areas where the drills are in a sodden condition.

A bright feature in an otherwise dull rural scene is the greenness of pasture lands, most of which are still in very good condition and providing a fair amount of good quality keep. This is particularly true of well managed grasslands, although the heavy rains and the lower temperatures of late have brought about a deterioration in the general condition. The absence of sharp frosts has, however, assisted in prolonging the grazing period and in the maintenance of winter keep, which is much better than usual at this time of the year.

Supplies of purchased foodstuffs continued adequate for requirements, and prices cheapened during October. In sympathy with these lower rates the prices for home-grown foods also eased. It seems likely that with the principal home-produced foods remaining at low price levels and demand, this winter, for purchased feeding stuffs for live stock will be curtailed.

Cattle and sheep generally made a fair thrive during the month and are in a normal, healthy condition. Cattle appear to be comparatively free from disease, and only a few outbreaks of "hoose" and "red water" have been reported. Likewise, the health of sheep is good, and despite the very damp ground conditions foot troubles have been very slight in extent.

THE CROPS.

WHEAT.—Progress with threshing was generally retarded by adverse weather conditions. On a few farms this work has been completed, but the bulk of the crop has still to be threshed. The yields so far obtained have varied according to the conditions under which the crop was saved.

Yields of from 20 to 25 cwt. of fair quality grain have been reported, but it is understood that in the case of crops harvested late, the quality of the grain is less satisfactory than usual, and the yields generally below average.

Prices obtained for new season's grain last month ranged from 5/- to 6/- per cwt.

OATS.—In the late districts some of this crop was still in the fields, in huts or in stooks, whilst in a few isolated instances cutting had not been done at the end of October.

In some early districts fair progress was made with the threshing of oats. This work has proceeded very slowly on account of adverse weather, and elsewhere, as a rule, only those crops which were badly saved were threshed as a precautionary measure. A large proportion of the crop has suffered in quality from weathering and the yields in these cases will be reduced by reason of the shedding of the grain. In the case of well saved crops the results of threshing have been very satisfactory, the yields being above average and the grain firm and of good quality.

For the increased supplies of new season's white oats marketed during October prices declined, and on average were 4½d. per cwt. cheaper on the month at 5/2½d. Small lots of the old crop marketed also fetched cheaper rates at around 7/9d. per cwt. Oat straw was offered in larger quantity, and prices were a little easier at an average of 41/10d. per ton.

BARLEY.—Very little of this crop has as yet been threshed, but judging from the few results to hand it would appear that the yields will be higher than those obtained a year ago, and the quality of the grain up to a high standard where it was possible to save the crop in good condition.

FLAX.—Scutching operations have begun but, generally speaking, only on a small scale. The general indications are that the yields will be lower and the quality of the scutched flax rather less satisfactory than for the previous season.

Supplies marketed in October have sold at prices ranging from 7/9d. to 10/3d., and averaging 9/2¾d. per stone, which compares with a range of 8/6d. to 11/6d. and an average of 10/3¼d. per stone obtained at the opening markets last season.

POTATOES.—On account of the exceptionally bad weather and soil conditions the lifting of this crop was only possible in the early and light soil districts, and it is estimated that more than half the entire crop has still to be dug.

On heavy land, the soil conditions were extremely bad, and this, together with the strong growth of weeds which is present in many fields this year, made digging operations impossible.

Where flooding has occurred heavy losses will accrue from rotting. Already the white varieties have suffered considerable damage from the excessive dampness, and unless the remainder of the crop is raised soon, the yields of good ware potatoes may be considerably reduced.

Growers will note from the information supplied on this crop on page 358 that the outlook for the 1938/39 main crop season is not promising. Up to the present trade has been dull, and shipping merchants in Northern Ireland have been paying lower prices than at this time last year in keeping with the lower rates prevailing in Great Britain. The weekly shipments since the commencement of the current season have been below those of a year ago, as the following figures show:—

SHIPMENTS OF POTATOES FROM NORTHERN IRELAND.

	Tons		Tons
Week ending 8th October, 1938	726	Week ending 9th October, 1937	1,268
,, ,, 15th ,, ,,	1,262	,, ,, 16th ,, ,,	1,607
,, ,, 22nd ,, ,,	1,615	,, ,, 23rd ,, ,,	2,476
,, ,, 29th ,, ,,	2,180	,, ,, 30th ,, ,,	2,917

The prices per ton paid by shipping merchants to growers for ware and seed potatoes during the week ended 5th November, 1938, were as follows:—

WARE.

	Bagged.	Loose
	£ s. d. £ s. d.	£ s. d. £ s. d.
Up-to-Date	2 0 0	1 10 0 to 1 15 0
Arran Banner	1 17 6 to 2 0 0	1 10 0 ,, 1 15 0
Arran Victory	1 10 0 ,, 2 0 0	1 10 0 ,, 1 15 0
Kerr's Pink	1 15 0 ,, 2 5 0	1 15 0 ,, 2 0 0
Majestic	2 0 0 ,, 2 7 6	

SEED.

	Bagged	Loose
	£ s. d. £ s. d.	£ s. d.
Up-to-Date	4 0 0	3 10 0
Arran Pilot	8 0 0 to 9 10 0	

Supplies of potatoes at local markets last month were again lighter than in the previous month, and prices continued their downward trend, the average for all classes of the main crop being 1½d. cheaper at 2/9½d. per cwt. The principal variety, Arran Victory, was 1d. cheaper at 2/10¾d. per cwt., while Kerr's Pink declined by 2½d. to 3/2d. per cwt. Small supplies of British Queen also sold at lower rates, averaging 2/10d. per cwt.—a reduction of 1½d. per cwt. on the month.

MANGELS.—Progress with the lifting of the roots varies to a considerable extent throughout the country. On most farms the crop is expected to yield well, and on average it is likely that results will be better than usual both as regards yield and quality. It was reported that on some farms an abnormal proportion of the roots have "shot".

TURNIPS.—Where growing on light soils the crop has made further improvement, and is in a very promising state. On heavy soils, however, the weather conditions have interfered with the necessary cultivations, and weeds have appeared in large numbers. This, together with the effect of continuous rains, has had an adverse effect on growth. Attacks of "finger and toe" and "crown rot" diseases are fairly common in some districts, but the tendency for the crop to "bolt" is generally less noticeable than formerly. On the average, the crop should reach normal dimensions in yield and the quality be satisfactory.

CABBAGE AND KALE.—The crops have done well this year and, except where growing on very heavy land, the plants are generally in a sound and healthy condition. Small areas of cabbage have yielded well, and supplies are now being fed to stock. Marrow stem Kale, which is being grown on a larger scale than formerly, is also being used at present for feeding to dairy cattle.

HAY.—The threshing of seeds hay progressed slowly but steadily, and the work is now nearing completion. The results have been less satisfactory than usual, the yields having been lighter and the quality lower than in recent seasons. Prices, however, have ruled well above those obtained a year ago, the average rates for last month of 18/8¼d. per cwt. for Perennial ryegrass, 16/8d. for Italian and 11/10½d. for mixed, comparing with 9/7d., 7/10d. and 6/10d., respectively, for October, 1937.

Rather small supplies of hay were marketed during October, and the demand was only fair at rates below those ruling at this time last year. The average quotation for the new crop of upland hay increased on the month by 2/9d. to 56/3d. per ton, but this figure is 4/11d. below that for October, 1937. New season's meadow hay, which declined in value on the month by 1/3d. to 42/9d. per ton, was 3/4d. cheaper than a year ago. A small quantity of last year's upland hay appreciated in price since September last, and averaged 73/- per ton.

LIVE STOCK.

CATTLE.—The general condition and health of store cattle last month were satisfactory. "Hoose" was prevalent among some cattle grazed in low-lying areas where pastures were very wet. Cases of "redwater" have also been reported, but to a lesser extent than usual at this time of year.

Cattle ranging on good grass made fair progress during the month, but as a general rule, hand-feeding was being done on an increasing scale. The estimated number of cattle being fattened is on a par with last year.

Trade in store and fat cattle continued on quiet lines during October, and price tendencies were again easier. Fairly good supplies were forward, and good large stores were most in request.

Dairy cattle were in fair to good condition at the end of last month, but the milk yield showed a seasonal decline. The usual cases of sterility and abortion have occurred, but not to any greater extent than in a normal season. At fairs last month dairy cattle were rather scarce. A firm demand was maintained for good animals, and prices for these advanced.

SHEEP.—The health of the flocks is normally good. Outbreaks of "foot-rot" and "liver-fluke" appear to be few, the precautionary measures taken by most farmers having the desired effect, but with continuing wet weather the presence of liver-fluke disease must be feared. See page 394.

Supplies at fairs and markets last month were smaller than in September, but plentiful for requirements. Demand continued dull, and prices remained at the levels of a month ago. In seasonal request were good breeding sheep, especially Blackface ewes and Border-Leicester rams. Good fat animals, especially well-finished cross-bred lambs, also sold well.

PIGS.—There were normal supplies of sucker pigs offered at fairs. Demand for these was a bright feature of the livestock trade during the month. A firm demand was maintained all month, and prices were further improved. Store pigs, where offered, followed a similar trend. There was a good demand for the small supplies of sows for breeding. Prices per head were a shade firmer and ranged from £5 to £11 according to quality.

Weekly returns of (1) shipments of live pigs to Great Britain, and (2) purchases of dead and live pigs for curing in Northern Ireland last month are compared on next page, with corresponding details for 1937 in brackets.

Week ended	(1) Shipments to Great Britain		(2) Bought dead and alive for curing in Northern Ireland.				Total	
			Dead		Alive			
8/10/1938	1,303	(2,081)	13,006	(13,061)	5,565	(4,107)	19,874	(19,249)
15/10/1938	1,320	(1,625)	11,705	(10,924)	5,501	(3,103)	18,526	(15,652)
22/10/1938	1,135	(1,476)	10,733	(11,565)	5,515	(3,546)	17,383	(16,587)
29/10/1938	1,628	(1,485)	10,554	(11,149)	5,905	(2,936)	18,087	(15,570)
43 weeks ended 29/10/1938	72,125	(110,687)	388,627	(380,834)	148,898	(111,425)	609,650	(602,946)

HORSES.—Trade for farm horses continued dull in most areas, and prices showed little alteration on the month. Price ranges generally were:—First class sound horses, £30 to £50 per head; second class horses and younger animals, £25 to £30. Foals were fetching from £10 to £18 10s. per head.

MILK.—The very wet pastures last month had a detrimental effect on the dairy herds, and there was a decline in the milk yield from the previous month. Supplies, however, were up to normal for the time of year. Creameries paid from 4½d. to 5¾d. per gallon for milk delivered, the separated milk being returned to the farmer. The rate of equalisation payment for milk produced in Northern Ireland and delivered to creameries for manufacturing purposes has been determined at .04d. per gallon for the month of September, 1938, in accordance with the Milk and Milk Products Acts (Northern Ireland), 1934 to 1938.

It should be noted that under the regulations creameries are required to distribute the equalisation payment in accordance with the butter-fat content of the milk received from each supplier.

THE COST OF LIVING INDEX FIGURE.

The cost of maintaining unchanged the pre-war standard of living of working-class families at October 1st was approximately 55 per cent. over the level of July, 1914, and compares with 56 per cent. a month earlier, and 58 per cent. at October 1st, 1937.

At October 1st the index of retail prices of food in Great Britain and Northern Ireland, as ascertained by the Ministry of Labour, was 39 per cent. above the level of July, 1914, as against 40 per cent. at September 1st, and 43 per cent. a year ago. The downward movement shown in the current index was chiefly the result of further reductions in the prices of bread, flour and potatoes, partly counterbalanced by increases in the price of eggs and by the higher prices of milk in some areas.

THE MARKETS DURING OCTOBER.

Increased supplies of savoys and cauliflower were marketed last month, and average prices cheapened on the month by 5¼d. to 1/4d. per dozen for savoys, and by 4¾d. to 1/6d. per dozen for cauliflower. Cabbage, too, cheapened by 2½d. to 1/3d. per dozen, although supplies of this vegetable were somewhat less plentiful. Leeks and parsley were also in shorter supply, and the former was unchanged in price on the month and averaged 5d. per bunch, while the latter was ½d. cheaper at 5½d. per bunch. Supplies of carrots, parsnips and garden turnips were more plentiful than in September. Carrots at an average price of 9/3d. per cwt., were 1d. cheaper, whilst parsnips at 5/6d. and garden turnips at 1/5d. were 6d. and 2d. per cwt. dearer, respectively. Farmers' butter marketed in shorter quantities than in September, was generally a little cheaper on the month. The average price of print was reduced by ¼d. to 1/2¼d. per lb. and lump by 1¼d. to 1/1d. Hen eggs were seasonally reduced in supply, and prices as fixed by the Ministry of Agriculture from week to week reflected the upward seasonal trend.

Supplies of poultry were shorter than in September, and prices were a little firmer on the month, chickens being 1d. dearer at 2/1¼d. each, hens ¼d. dearer at 1/7d. each, and ducks ¾d. dearer at 2/5d. each. The price averages per lb. live weight paid by wholesale merchants showed little variation on the month and ranged from 6d. to 8d. for chickens, 4d. to 6d. for hens and ducks, 10d. to 1/- for turkeys, and 4½d. to 5d. for geese.

Wool supplies declined by more than half, and long (unwashed) wool was stationary in price at 6½d. per lb., while mountain (unwashed) wool was ¼d. dearer at 5½d. per lb.

MARKETING OF EGGS ACTS (N.I.) 1924—1937.

The following table shows the prices fixed by the Ministry, and payable by licensed wholesale dealers, for eggs purchased from producers during the following weeks, as compared with the average prices at markets for the corresponding weeks of 1937.

Week ended	1938				1937			
	Hen eggs per lb.*		Duck eggs per dozen*		Hen eggs per lb.		Duck eggs per dozen	
	s.	d.	s.	d.	s.	d.	s.	d.
October 1st	0	11¾	1	3	1	0½	1	3
,, 8th	0	11¾	1	4	1	0¾	1	3½
,, 15th	1	1	1	4½	1	0¾	1	3½
,, 22nd	1	2	1	5½	1	0¾	1	3¾
,, 29th	1	4	1	4½	1	1½	1	4¾

*Where hen eggs are delivered by the producer to the packing store of a licensed wholesale dealer of Class A an additional ½d. per lb. is payable; in the case of duck eggs an additional ¾d. is payable for each complete dozen so delivered.

Payment on a quality basis came into operation during the week ended 5th March, 1938.

The following were the standard deductions :—

Hen eggs : "Seconds" and soiled eggs ½d. per egg, Rejects 1½d. per egg up to and including week ended 15th October; during the weeks ended 22nd and 29th October 1¾d. per egg and 2d. per egg respectively.

Duck eggs : Rejects 1¼d. per egg up to and including week ended 15th October, afterwards 1½d. per egg.

LIVE STOCK CENSUS, OCTOBER, 1938.

A further quarterly census of live stock was taken at the 1st October last. The census was taken on lines similar to those in April this year, and in the same months in 1935, 1936 and 1937. Forms were sent to some 19,000 farmers with a request that they should supply particulars of the numbers of cattle, sheep and pigs on their farms at the 1st October, 1938, and 11,000 made returns. The numbers of live stock in Northern Ireland were estimated from these returns.

The result of the estimate, together with the estimated numbers of live stock at the 1st October, 1937, and the numbers returned at the complete enumeration at the 1st June, 1938, are shown in the table below with the percentage changes which have occurred in the numbers since each of those dates.

	1st October 1938	1st June, 1938	1st October, 1937	% Change as compared with	
				1st June, 1938	1st October, 1937
				%	%
Milch Cows ...	233,000	229,262	238,000	+1.6	−2.1
Heifers in Calf ...	39,000	30,085	34,000	+29.6	+14.7
Other Cattle ...	456,000	472,583	471,000	−3.5	−3.2
Total Cattle	728,000	731,930	743,000	−0.5	−2.0
Ewes	405,000	401,850	401,000	+0.8	+1.0
Other Sheep ...	243,000	491,581	224,000	−50.6	+8.5
Total Sheep	648,000	893,431	625,000	−27.5	+3.7
Sows	57,000	57,886	55,000	−1.5	+3.6
Other Pigs ...	522,000	503,613	526,000	+3.7	−0.8
Total Pigs ...	579,000	561,499	581,000	+3.1	−0.4

PRICES OF AGRICULTURAL PRODUCE.

Table showing the average prices of agricultural produce in Northern Ireland during the three months ended 30th September, 1938, together with comparative figures for the same period in 1937, and the average prices ruling during the third quarter of the years 1911-1913 :—

Commodity	Quarter ended 30th September.			Percentage increase or decrease in price as compared with the corresponding period 1911-13	
	NORTHERN IRELAND		ULSTER		
	1938	1937	1911-13	3rd Quarter, 1938	3rd Quarter, 1937
	£ s. d.	£ s. d.	£ s. d.	%	%
Oats (white) .. .. per cwt.	0 6 6¼	0 7 3	0 7 3	−10.06	− 3.45
Potatoes .. .. do.	0 2 11½	0 3 0½	0 3 5	−13.41	−10.98
Hay, Clover .. .. do.	0 3 0¼	0 3 5¼	0 3 5	−11.58	+ 0.61
,, Meadow .. .. do.	0 2 5½	0 2 6	0 2 10	−13.24	−11.77
Grass Seed, Perennial .. do.	0 18 0	0 9 7	0 11 7½	+54.84	−17.56
,, Mixed .. do.	0 12 0	0 7 4½	0 11 5¼	+ 4.92	−35.52
Calves (young) .. .. per head	2 15 2	3 2 2	1 14 4	+60.68	+81.07
Store Cattle, 6-12 months .. do.	7 18 4	8 0 0	4 19 1	+59.80	+61.48
,, 1-2 years .. do.	10 3 7	10 15 2	7 11 3	+34.60	+42.26
,, 2-3 years .. do.	12 7 4	13 4 3	10 1 7	+22.70	+31.09
Fat Cattle, 2-3 years .. do.	15 2 4	15 19 5	13 11 0	+11.56	+17.86
,, Cows and Bulls .. do.	10 13 2	12 8 0	12 4 7	−12.84	+ 1.40
Springers (Cows and Heifers) do.	16 10 1	17 2 9	14 17 10	+10.83	+15.08
Milch Cows (down calved) .. do.	14 12 5	15 17 0	13 12 1	+ 7.47	+16.51
Lambs (under 12 months) .. do.	1 1 1	1 10 7	1 2 1	− 4.53	+38.49
Wethers .. .. .. do.	0 17 6	2 6 3	—	—	—
Breeding Ewes .. .. do.	1 8 9	2 0 5	—	—	—
Fat Sheep, 1-2 years .. do.	1 1 4	2 5 0	2 0 6	−47.33	+11.11
,, over 2 years .. do.	1 8 8	1 15 3	2 0 3	−28.78	−12.42
Sows for Breeding .. do.	8 3 6	7 4 8	5 15 9	+41.25	+24.98
Young pigs, 8-10 weeks .. do.	1 11 6	1 11 10	1 8 8	+ 9.88	+11.05
Pork .. .. .. per cwt.	*3 8 1	*3 7 2	2 17 11	—	—
Butter, Farmers' .. .. do.	6 12 11	5 15 1	4 13 8	+41.90	+22.86
Hen eggs .. .. per lb.	0 0 11	0 0 10¼	†0 9 4	—	—

*Average of fixed prices. †All-Ireland price per 120.

It will be noted that with few exceptions prices for agricultural produce and live stock last quarter were below those for the corresponding period of 1937. Of the crop produce listed only grass seed improved on the year, and the principal variety of ryegrass grown in Northern Ireland, perennial, rose to high levels. The average price for the quarter was 18/- per cwt.—the highest price since March, 1935. Potatoes and meadow hay showed but slight declines on the 1937 figures, and prices for these crops are now below the pre-war averages. The position in regard to potatoes may be regarded as unsatisfactory, especially in view of the further increased production in Great Britain this year. Oats and clover hay showed a more marked decline in price on the year, but in the case of oats consolation may be gained from the fact that farmers will be recompensed to some extent through the operation of the Barley and Oats Subsidy Scheme. All live stock, except sows for breeding, depreciated in value on the year. The position of the cattle trade, however, remained satisfactory in that price levels generally were maintained appreciably above the 1911-13 levels, although somewhat lower than the high rates ruling at this time last year. Sheep were a very disappointing trade last quarter, and a sharp fall in prices since 1937 is attributed to the decline in values of wool, and to the greatly increased number of lambs born this spring.

For the remaining items in the table, pork, farm butter and hen egg prices appreciated on the year, and illustrate in a period of decline the effectiveness of the measures taken in Northern Ireland to maintain prices of these commodities at economic levels.

THE POTATO CROP.

Following a season of increased production when prices for the 1937 crop fell appreciably below the remunerative levels reached in the main crop season 1936/37, the outlook for the current season is none too bright in view of the further increase in production forecast in Great Britain this year. It may be remembered that production in Great Britain last year increased by 244,000 tons as the result of the larger yields obtained in England and Wales, and the increase in the area planted in Scotland. In Northern Ireland too, production increased by 83,000 tons, the result of the larger yield obtained as the area actually showed a reduction on the year.

The disappointing prices obtained for the 1937 main crop doubtless influenced growers in Northern Ireland, and brought about a further reduction in the total acreage under potatoes this year of almost 2,000 acres, or 1.5 per cent. of the 1937 acreage. In England and Wales, however, there was a further increase recorded in the area under potatoes amounting to 19,300 acres, or 4.2 per cent. more than of the 1937 acreage, and in Scotland the area increased this year by 3,000 acres or 2.2 per cent. more than the 1937 figure. In accordance with information collected at 1st October, the average yield of this year's crop in England and Wales is forecast at 7 tons per acre. On the basis of this yield the total production in 1938 is given as 3,316,000 tons, which represents an increase of 190,000 tons on the production forecast at the end of September, 1937. In Scotland, the entire production of this year's crop is forecast at 940,000 tons, or 45,000 tons more than that forecast at the 1st October, 1937. Thus, it will be noted, the total production forecast for Great Britain shows a further increase on the year of 235,000 tons. It is not yet possible to give an accurate forecast of the average yield of the main crop in Northern Ireland this year. Weather conditions during the past two months have been most unfavourable for lifting, and the greater part of the crop is still in the ground. It will be noted from the account of the conditions given on page 350 that the prospects are now much less promising than was foreshadowed in earlier reports. On heavy and retentive soils considerable damage will no doubt result from the incessant heavy rains, and the yields of good marketable produce will be somewhat reduced. In view, however, of the results obtained in a number of districts, where soil conditions permitted lifting operations to proceed during favourable intervals, the yield of this

year's crop is not likely to fall appreciably below the average for the past 10 years of 6.7 tons. Taking a figure of just under 7 tons per acre on the assumption that even with losses the yield will be about normal, we may hazard a guess that production this year in Northern Ireland will reach almost 840,000 tons, which is about 28,000 tons less than for last year. In view of the present position of the crop, however, as stated on page 350 this figure must be treated with a considerable amount of reserve.

With the total production forecast for Great Britain showing a further considerable increase on the year the question of prices becomes more acute. Since the commencement of the new main crop season lower prices have ruled in Great Britain than at this time last year, and in Northern Ireland also the prices obtained by the growers from the shipping merchants have been cheaper. Efforts to effect an improvement in the price situation during last season were made by the Potato Marketing Board in Great Britain by means of revised riddle regulations which were brought into force in August, 1937, in order to prevent late varieties competing with "earlies", supplies of which were not then exhausted. Later, in December, when the extent of the increase in production of the main crop was fully realised the size of the minimum riddle was raised in order to restrict supplies of ware potatoes on the markets. The regulation of imports from foreign countries by the Board of Trade in Great Britain on the advice of the Markets Supply Committee, also helped in checking the fall in prices. Shipments of Northern Ireland potatoes to Great Britain during last season declined on the year from 192,200 tons to 176,770 tons. Although prices throughout the 1937-38 season were, generally speaking, much cheaper than for the previous two seasons the crop was not such a financial failure as might be imagined. It will be recollected that with growers being unable to dispose of their heavy stocks at reasonably remunerative prices in the earlier part of the season increased use was made of potatoes for feeding to live stock at a time when purchased cakes and meals were very dear. Later in the spring months, when there was a belated demand for ware potatoes, the remaining heavy stocks were disposed of to advantage at the higher rates prevailing. On an average, last year's crop fetched around 45/- per ton, which is much lower than the average quotation for the previous two seasons, but was above the average price obtained for the larger crop harvested in 1934.

Shipments to Great Britain since the commencement of the new shipping season have in the aggregate been rather smaller than for the corresponding period a year ago, and with the market position in England weakening

steadily during recent weeks, a new riddle order was introduced on 3rd November with the object of reducing supplies on offer and thereby raising growers' prices to more economic levels.

In order to safeguard Ulster growers in regard to prices a new Marketing of Potatoes Bill has already been passed by the Parliament of Northern Ireland. The main object of the Bill is to prevent the undercutting of prices to buyers in Great Britain. Since 1935 a Potato Marketing Association has attempted to secure voluntary agreement on this point, but it is felt that this could be achieved more effectively if the prices were fixed by a statutory body. The Act provides for a Potato Marketing Committee, composed of elected representatives of licensed exporters, a number to represent the producers and a further number appointed by the Minister of Agriculture, to determine the prices at which potatoes may be sold by licensed merchants to buyers in Great Britain from week to week, according to the state of the market in Great Britain.

CHRISTMAS POULTRY TRADE PROSPECTS.

The following information concerning poultry supplies is intended as a guide to Northern Ireland poultry producers, especially those who cater for the Christmas turkey trade.

The total poultry population of Northern Ireland, as ascertained at the 1st June last, showed little alteration on the year. While geese increased only slightly in number, the turkey population increased by about 8.5 per cent. to 456,214, and the indications are that the number of turkeys available for the Christmas trade this year will be rather more than last year.

Weather conditions of late have been very trying on the flocks, but the cheaper rates ruling for feeding stuffs have encouraged producers to feed their birds more liberally, and there is every reason to hope that the quality of the birds for the coming season will be up to a very good standard.

SUPPLY POSITION IN GREAT BRITAIN.

The outstanding feature of the poultry returns in England and Wales is that the steady decline in numbers, which has been in evidence since 1934, has now been almost completely arrested, the total number at the 4th June last being almost identical with that of the previous year. The estimated number of turkeys on 4th September was 948,000 as compared with 788,000 on 4th June. The increase over this period is much less than the corresponding increase in 1937; the figures then being 975,000 on 4th September, and 680,000 on 4th June. As against this, however, in Scotland, where the total number of poultry showed an increase of only 2.3 per cent., turkeys registered a further increase of 23.3 per cent. on the year from 117,000 to 143,400, and geese increased in number by about 8 per cent. to 25,600. In general, it may, therefore, be expected that supplies in Great Britain will remain on approximately similar levels to last year.

IMPORTS.

Imports of dead poultry into the United Kingdom in December, 1937, totalled 199,285 cwts. as compared with 187,358 cwts. during the corresponding month of 1936, the principal sources of supply being Hungary, Yugo Slavia and Eire. For the nine months ended 30th September last imports amounted to only 192,807 cwts. as against 227,359 cwts. for the same period last year. This, however, must not be taken as a reliable guide, as imports

during December often total as high as the other eleven months of the year. It should not be overlooked that in regard to the coming season the position of supply has been somewhat altered by the Anglo-Eire Agreement under the terms of which poultry may now enter the United Kingdom from Eire, free of duty. It may be expected that producers in the South will take full advantage of this facility, and this will, no doubt, tend to affect the supply position.

From the details given above it will be obvious that if Northern Ireland turkeys are to find a ready market, it is essential that the birds should be of good quality and marketed in the most attractive manner possible. There is naturally a preference on the British market for home produced birds, including, of course, Northern Ireland birds, but with increased competition expected from foreign and Empire sources, producers in Northern Ireland must not rely only on home preference, and must be prepared, as heretofore, to meet their competitors on the grounds of quality.

In regard to prices, it should be noted that since this time last year there has been a general fall in the cost of living, and it is reasonable to suppose that prices for Christmas poultry during the coming season may follow the trend of other commodities, and be less satisfactory than those obtained last year.

Wholesalers in Northern Ireland have recently been paying 10d. to 1/- per lb. live weight for turkeys, and 4½d. to 5d. per lb. for geese. Those readers interested in the prices ruling for poultry should note that they are published weekly in the Ministry's Report on Trade in Livestock and Agricultural Produce, which may be had, free of charge, on application to the Secretary, Ministry of Agriculture, Stormont.

The following tables are appended as a guide to producers :—

Representative Smithfield quotations for first quality Poultry during December, 1936, and 1937.

Date	Chickens		Turkeys				Ducks	
	English	Surrey	English		Irish		Aylesbury	
	1937	Same day 1936	1937	Same day 1936	1937	Same day 1936	1937	Same day 1936
	per lb. s. d.	per lb. s. d.	per lb. s. d.	per lb. s. d.	per lb. s. d.	per lb. s. d.	per lb. s. d.	per lb. s. d.
Wednesday 1st December	1 6	1 4	—	—	1 4	—	1 2	1 0
8th „	1 6	1 5	—	—	1 4	—	1 3	1 1
15th „	1 6	1 5	—	—	1 3	—	1 3	1 1
22nd „	1 9	1 5	1 9	1 8	1 4	1 5	1 3	1 1
29th „	1 6	1 5	1 9	1 8	1 4	1 2	1 3	1 1

The following statement shows the weekly imports of poultry registered as entering the United Kingdom during recent weeks:—

	Week ended		Week ended	
	2nd Nov. 1938	8th Nov. 1937	26th Oct. 1938	27th Oct. 1937
	cwt.	cwt.	cwt.	cwt.
Chickens	4,136	2,546	4,545	5,216
Turkeys	2,928	2,467	1,522	2,873
Ducks and Geese	305	292	116	270
Other Poultry	927	744	795	738

ULSTER FRUIT TRIUMPHS.

The following extract has been taken from "The Farmers' Weekly," November 4th, 1938:—

"A triumph for Northern Ireland Bramley's seedling apples was gained at the Bristol Imperial Fruit Show last week, when County Antrim apple growers, for the second successive year, captured two out of the three prizes in the United Kingdom apple class.

Messrs. F. Manderson, Crumlin, and John Graham, Crumlin, with equal marks, took second and third prizes in the United Kingdom section; while Mr. Sinclair Thompson, owner of the Ulster champion orchard for 1938, at Crumlin, obtained third prize in the championship class confined to first prize winners at previous Imperial fruit shows."

PIG BREEDING AND MANAGEMENT.

(The following wireless talk given from the Northern Ireland station, on Monday evening, October 3rd, by Mr. J. Morrison, B.Sc., N.D.A., of the Agricultural Research Institute, Hillsborough, is reprinted here through the courtesy of the British Broadcasting Corporation).

Most of you know that the re-organisation of pig marketing and the bacon curing industry in Great Britain is at present under consideration, and that the changes will undoubtedly affect our scheme. Though we cannot anticipate the actual nature of the new provisions, we know they will be designed to have the effect of stimulating pig production in Northern Ireland.

Since the introduction of the Pigs Marketing Scheme in Northern Ireland remarkable progress has been made in the pig industry. The scheme has led to a spectacular increase in the pig population, and to a distinct improvement in the type of pig being bred. This improvement in type reflects great credit on producers generally; it has been due largely to the influence of the Large White breed—a breed which is eminently suitable for bacon production.

The market for our main output of bacon is in Great Britain, and to maintain and improve our position in that market we simply must supply bacon of good uniform quality. In my opinion this can be done most effectively by concentrating on good strains of the Large White breed, and that for the future development of the pig industry in Northern Ireland producers would be well advised to stick to that breed. It must not be forgotten that the strain within the breed is even more important than the breed itself. Therefore, in the selection of breeding stock it is essential to concentrate on the strains that will produce first class bacon economically, and pigs that will grade satisfactorily.

In bacon production the influence of breeding is greater than is often realised. With badly-bred stock it is impossible to maintain a uniform standard of conformation and performance. On the other hand, with well-bred stock and proper selection, not only can improvement in conformation and general performance be brought about in a comparatively short time, but uniformity in type and in standard of grading can be maintained at a satisfactory level.

In commercial pig production it may not always be practicable to breed only from pedigree sows, but it should be the aim of every farmer who is breeding pigs, either for sale when young or for subsequent fattening, to have his sows as nearly pure-bred as possible. As for the boar, it is essential that he should be pure-bred, as well as being of the type and conformation of the typical bacon pig. It should be remembered that a boar that is not pure-bred, although of suitable type, cannot be depended on to breed pigs of uniform type and quality, and that such a boar can do a lot of harm in a short time. By paying attention to the breeding and type of both males and females, it is possible to get rid of that excessive variation which is always associated with mongrel-bred stock.

We have all an idea of the type of pig that is wanted, but I think there is often a tendency to go to extremes on this question. Some producers have the misguided idea that when they have got a pig with very light forequarters and great length of body there is no need to look for anything else. They forget that the constitution of the pig and economy of production are also very important factors. I do not wish for one moment to decry length of side, and lightness of forequarters—both are important and desirable—but we must be careful not to sacrifice constitution when aiming at these ideals, especially when modern methods of intensive rearing and feeding are practised. Nor must we overlook economy of production when, with high feeding costs, the margin of profit may be relatively small. What we want to aim at is as much length as possible, good depth of side and hams, and a smooth and comparatively light shoulder in proportion to the rest of the body, and at the same time a sound constitution.

So much for the selection of breeding stock. In connection with the rearing of pigs, I am often asked—"at what age should a gilt be mated?" I think that if she is being mated for the production of pedigree pigs it is to the advantage of the breeder to allow her to attain good development before mating. Generally speaking she should not be mated before she is seven months old. On the other hand if she is being used for the production of commercial pigs, and is well developed, she may be mated when about six months old. As a matter of fact a definite age at which to mate gilts cannot be stated, as this depends more on their general condition and development than on their age. The mating of gilts that are under-developed is bad practice, and will result not only in weakly first litters but will also impair the constitution of the mother.

The same remarks apply to the young boar, but age is of more importance here, and a boar is not sufficiently matured for breeding before the age of seven months. He should be of good size for his age, be well developed, and he should not be used excessively his first season, as this will seriously impair his breeding powers later.

Now, the management of sows and gilts from time of service to farrowing plays a very important part in the production of good litters of thrifty pigs. Regular exercise for the breeding stock is the first essential, and they should be allowed to run on clean fresh ground. The fields on the majority of the farms in Northern Ireland are small and, accordingly, well adapted for this purpose. Little or no extra fencing is required, as would be the case if the fields were large, and there should be no difficulty in arranging for the in-pig sows to graze on fresh pasture every year. Disease is the greatest source of loss to pig producers, and where breeding sows are kept continuously on the same land the soil, sooner or later, becomes infested with disease organisms of one kind or another. By providing clean land the sows can be maintained in better health, and the risk of their contracting disease and of carrying infection to their litters will be greatly reduced.

The amount of food which an in-pig sow should receive will depend on her condition, and on the amount and quality of grass available on the run. While it is desirable to increase the allowance of meals a few weeks before farrowing, it is also necessary to give proper and sufficient food during the whole period of pregnancy so that the sow will gradually attain to a condition that will enable her to nurse her litter satisfactorily.

I should like at this point to emphasise the need for adequate supplies of green food for breeding sows, both before and after farrowing, and particularly during the winter months when grass is not available. Field or Drumhead cabbages are easily grown on the farm, and can be used from autumn right up to Christmas, after which time any of the kales may be fed. The most difficult period in the year to have a supply of green food is in early spring, and if no green food is available at that time swedes or mangels can be used. Sows are very fond of mangels, and it is well worth while giving one or two every day to each suckling sow.

A very important part of the pig breeder's work is the management of the litters. Many different systems of litter management can be adopted to suit

particular conditions. In Northern Ireland out-door rearing, in-door rearing and a combination of both are practised successfully, but I think it will be generally agreed that fewer troubles are experienced with out-door rearing. Whichever system is practised, it is now recognised that one of the main essentials for successful pig rearing is a uniform temperature in the farrowing pen. Many of the existing farrowing pens are too cold and draughty, with the result that the sow becomes restless and treads on her pigs, and the little pigs themselves are obviously uncomfortable, and their vitality becomes so reduced that they fall easy victims to illness and disease. One essential then for successful pig rearing is the provision of a warm, dry farrowing pen, free from draughts, particularly floor draughts. Another essential is a "creep" in the farrowing pen so that the little pigs can get food at any time without interference from the sow.

The provision of a "creep", in which a trough or small self-feeder is placed for the feeding of the little pigs while on the sow, is a practice which should be universally adopted. Sometimes there is difficulty in getting the little pigs to commence to eat, and to encourage them to do so a long trough, from which the sow can also eat, should be placed in the pen for a few days. It will be found that the young pigs will start eating along with the mother and will then eat by themselves from the trough in the "creep". A supply of water, not only for the sow but also for the pigs, is an important factor in rearing, and it is well to remember that the more a little pig drinks the more it will eat.

We do know that while restricted feeding is desirable up to a point with pigs near the finishing stage, it should on no account be practised in the case of young pigs. Young growing pigs should be fed to full appetite so as to get maximum growth in the early stages of their life, and there should be no store period. If the young pigs are restricted in their feeding or get a set-back in the early months of life, and then forced for quick finishing, it is most likely that the carcases will be overfat and of low grade. Therefore, everything should be done to ensure that the young pigs are kept growing and thriving not only when on the sow, but also after weaning. If the pig is of the right type to begin with, and is well fed on a suitable mixture of meals when young, and is reasonably restricted in the amount of food when nearing bacon weight, there should be no difficulty in getting a satisfactory payment grade, and in producing bacon of good quality.

One other point—you will not get the best out of your pigs if the feeding house is cold and draughty. Pigs will rest better and will require less food when kept reasonably warm, and it will be found that they will also grade better, and the fat in the carcases will be firmer and of better quality.

MARKETING SCHEMES.

AGRICULTURAL MARKETING (PIG INDUSTRY) ACT (N.I.) 1934.

PIG PRICES FOR NOVEMBER, 1938.

The following announcement has been made by the Pig Industry Council for Northern Ireland.

Prices for Dead Pigs.

The prices per dead cwt. for dead pigs sold by producers to curers in Northern Ireland in November, 1938, are as follows :—

Weight Class. (Dead Weight)	Grade 1.	Grade 2.	Grade 3.	U.L. or U.F.	Partly Black Pigs.
c.1.0.21 to c.1.1.13	66/4	63/4	60/4	56/4	
c.1.1.14 to c.1.2.3	70/4	67/4	64/4	60/4	5/-
Weight Class. (Dead Weight)	Grade A.	Grade B.	Grade C.	U.L. or U.F.	below
c.1.2.4 to c.1.2.14	70/4	67/4	64/4	61/4	relevant
c.1.2.15 to c.1.3.14	70/4	67/4	64/4	61/4	Grade
c.1.3.15 to c.2.0.0	67/4	64/4	61/4	58/4	Price.
c.2.0.1 to c.2.0.14	61/4	58/4	55/4	52/4	

Pig Carcases c.1.0.0 to c.1.0.20 :—63/4

(*N.B. These prices show a decrease of 7d. on those fixed for October*, 1938).

Authorised cuts :—

(a) Broken ham (dry, shank and/or shell bone break)—5% of the gross value of the carcase.

(b) Broken ham (wet break)—12½% of the gross value of the carcase.

(c) Shoulder-stuck carcase—3/- per shoulder affected.

The gross value of a carcase is the product of the dead weight and the relevant grade or other price per cwt.

Where portion of a pig carcase is condemned on account of disease the existence of which could not reasonably have been known to the producer before despatch to the curer, the appropriate grade price (or fixed price if the carcase weighs not less than 1 cwt. 0 qr. 0 lb. and not more than 1 cwt. 0 qr. 20 lb.) shall apply. If the carcase is wholly condemned on account of disease

the existence of which could not reasonably have been known to the producer before despatch to the curer the relevant Grade 2 or Grade B price (or fixed price if the carcase weighs not less than 1 cwt. 0 qr. 0 lb. and not more than 1 cwt. 0 qr. 20 lb.) shall apply.

The foregoing prices do not apply in the case of (a) wholly black pigs, boars, rigs or stags, sucked sows, and pig carcases weighing under c.1.0.0 or over c.2.0.14, and (b) pigs visibly diagnosable as diseased before despatch by the producer and subsequently condemned; emaciated or screw pigs, smelling pig carcases with definite indications of putrefaction, and pig carcases badly abused or damaged before being handed over by the producer to the curer.

Prices for Wiltshire Pigs Sold on Direct Contract.

In the case of pigs sold alive under direct contract to Wiltshire curers the prices per dead cwt. payable for pigs delivered in respect of the month of November, 1938, are as follows:—

Weight Class. (Dead Weight)	Grade 1.	Grade 2.	Grade 3.	U.L. or U.F.	Unsuitable.
c.1.0.21 to c.1.1.13	76/4	73/4	70/4	66/4	63/4
c.1.1.14 to c.1.2.3	76/4	73/4	70/4	66/4	63/4
	Grade A.	Grade B.	Grade C.		U.L. or U.F.
c.1.2.4 to c.1.2.7	73/4	70/4	67/4		64/4
c.1.0.0 to c.1.0.20	Suitable 65/4		Unsuitable 63/4		
Over c.1.2.7	On the same basis as pigs sold dead				

(*N.B. These prices show a decrease of 7d. on those fixed for October*, 1938).

Prices for Live Pigs Sold to the Pigs Marketing Board (Northern Ireland).

In the case of pigs sold alive to the Pigs Marketing Board during November, 1938, the prices per live cwt., according to grade, are as follows:—

Live Weight.	Grade 1.	Grade 2.	Grade 3.	Unsuitable.
c.1.1.14 to c.1.2.13	49/–	49/–	49/–	47/6
c.1.2.14 to c.2.0.0	57/3	55/–	52/9	U.L. or U.F. 49/9 — 47/6
c.2.0.1 to c.2.1.14	51/3	49/–	46/9	44/6
c.2.1.15 to c.2.2.7	49/–	46/9	44/6	42/3
c.2.2.8 to c.2.2.21	44/6	42/3	40/–	37/9

(*N.B. These prices show a decrease of 6d. on those fixed for October*, 1938).

These prices do not apply to live pigs under c.1.1.14 or over c.2.2.21, live pigs intended for breeding, live boars, live sucked sows, rigs or stags, injured or diseased pigs, live in-pig gilts, or live pigs sold (on contract registered with the Pig Industry Council) to curers in Northern Ireland. All other live pigs inside the weights c.1.2.0 to c.2.2.21 can be sold only to the Board.

Authorised Deductions.

Every pig (dead or alive) sold to a curer or to the Pigs Marketing Board is subject to a levy and contribution at present amounting to 4/-.

In addition to this amount, a deduction of 4d. per pig may be made in the case of sales to curers to cover insurance, so that the producer will not suffer financial loss if the carcase is condemned as unfit for human consumption.

COST OF STANDARD PIG RATION.

The average retail cash price per cwt. of the standard ration for the sixteen weeks' period ended 22nd October was 9/4¼d. The average price for the similar period ended 24th September, was 9/6d. These figures have been calculated by the Ministry from returns collected from ten representative centres in Northern Ireland.

The following is the ration upon which the feeding cost is based :—

Maize Meal	30%
Barley Meal	30%
White Pollards	20%
White Bran	10%
Meat Meal (60% Protein)	10%

GRADING STATISTICS.

Table showing the percentages of pig carcases falling within the weight and grade classes indicated during August, 1938.

Under c.1.0.21		c.1.0.21 to c.1.1.13					c.1.1.14 to c.1.2.3					Totals
Suitable	Un-suitable	Grade 1	Grade 2	Grade 3	U.L. & U.F.	U.	Grade 1	Grade 2	Grade 3	U.L. & U.F.	U.	
1.27	.11	2.93	1.38	.47	.22	.01	6.04	6.35	2.95	1.06	.04	22.83

Grade A.				Grade B.				Grade C.				
1	2	3	4	1	2	3	4	1	2	3	4	
9.83	19.83	2.52	.32	6.94	18.97	3.07	.64	2.44	7.86	1.05	.25	73.72

Ungraded Carcases.						
Under Grade A measurements. U.L.	Over Grade C measurements U.F.	Wholly condemned U1.	Wholly black, injured or damaged U2.	Overweights, boars, sows, etc. X.	Partly Black Y.	
.06	2.31	.03	.59	.45	.01	3.45
					Total	100%

These figures have been calculated from the purchase and grading statements which the curers furnish to the Ministry.

The following table gives the percentage results of an analysis of the purchase and grading statements furnished by Wiltshire Bacon Curers in respect of live pigs delivered on direct contract by producers during the month of September, 1938.

Weight Class.	Grade 1.	Grade 2.	Grade 3.	Unsuitable U.L. or U.F.	Total
Under c.1.0.0					.07
c.1.0.0 to c.1.0.20					1.40
c.1.0.21 to c.1.2.3	44.07	33.74	9.00	3.12	89.93
	Grade A.	Grade B.	Grade C.		
c.1.2.4 to c.1.2.7	1.47	1.86	.83	.07	4.23
c.1.2.8 to c.1.3.14	.93	2.33	.93	.18	4.37
				Total	100.00

The average net price per cwt. in respect of these deliveries works out at £3 11s. 1d., after making allowance for insurance and contribution to the Pigs Marketing Board.

The average weight works out at c.1.1.18½, the net average price per pig being £5 0s. 8d.

THE CATTLE INDUSTRY (EMERGENCY PROVISIONS) ACTS, 1934 AND 1935 AND THE LIVESTOCK INDUSTRY ACT, 1937.

The following is a summary made under these Acts up to and including 29th October, 1938.

Live Weight	*Number of Animals*	*Total amount paid.* £ s. d.
England and Wales ..	4,551,656	11,089,564 15 4
Scotland	1,393,143	3,609,862 17 4
Northern Ireland ..	474,352	1,002,456 6 8
Total (United Kingdom) ..	6,419,151	15,701,883 19 4
Dead Weight		
England and Wales ..	140,732	353,068 8 3
Scotland	43,001	123,571 7 6
Total (Great Britain) ..	183,733	476,639 15 9

NUMBERS CERTIFIED FOR SUBSIDY.

The numbers of fat cattle certified for payment of subsidy as published by the Livestock Commission in respect of September, 1938, are shown hereunder:—

	September, 1938.					Corresponding totals in	
	Home-bred.		Imported.				
	Ordinary Grade	Quality Grade	Ordinary Grade	Quality Grade	Total	Sept., 1937	Sept., 1936
England ..	23,282	32,999	6,640	19,531	82,452	90,611	96,060
Wales ..	3,364	3,253	90	474	7,181	7,402	8,126
Scotland ..	2,995	12,801	1,317	8,730	25,843	25,206	29,425
Northern Ireland	5,521	1,373	908	507	8,309	7,612	11,318
United Kingdom	35,162	50,426	8,955	29,242	123,785	130,831	144,929

As the great majority of fat stock markets are held on the early days of the week the rate of marketing of fat cattle cannot be judged accurately from the number of animals marketed in a calendar month. For comparative purposes appropriate weights are applied by the Livestock Commission to each day of the week, and the figures for each calendar month are adjusted accordingly, so as to allow as far as possible for the fact that a large number of markets are held on Mondays and that the number of markets held decreases day by day as the week proceeds. The adjusted figures for September, 1938, 1937 and 1936 are 128,622, 133,978 and 142,287 respectively.

The average prices per live cwt. of certified cattle in September, 1938, have been:—

	September, 1938.						Corresponding averages in			
	Ordinary Grade		Quality Grade		Average		September, 1937		September, 1936	
	s.	d.	s.	d.	s.	d.	d.	d.	s.	d.
England and Wales	35	11	38	10	37	9	39	9	34	7
Scotland	36	4	40	5	39	9	44	5	38	0
Northern Ireland ..	33	4	34	6	33	7	38	10	31	5
United Kingdom ..	35	7	39	2	37	11	40	8	35	1

WHEAT ACT, 1932.

ADVANCE PAYMENT TO REGISTERED GROWERS ON ACCOUNT OF DEFICIENCY PAYMENTS FOR 1938-39.

In accordance with Byelaw 31 of the Wheat Byelaws, 1932, the Wheat Commission give notice that they have decided to make an advance payment to registered growers who make proper applications on valid wheat certificates delivered to the Commission on or before Friday, 28th October, 1938. This advance payment is on account of the deficiency payments that will become due under the Wheat Act for the cereal year ending 31st July, 1939. It will be made on or about Saturday, 19th November, 1938, and will be at the rate of 3s. 0d. per cwt., equal to 13s. 6d. per quarter of 504 lbs.

The question of making an advance payment to growers who deliver wheat certificates after 28th October will be considered by the Commission later in the cereal year.

AGRICULTURAL NOTES.

SEASONAL FARM NOTES.

Ploughing.—Early ploughing exposes the soil to winter frosts, and thus aids considerably in obtaining a good tilth and in facilitating the preparation of the seed bed in spring. Soils which tend to be damp and heavy benefit most from early ploughing. Every opportunity during favourable weather should be taken from now onwards to plough the stubble ground.

Finger and Toe Disease.—Where attacks of "finger and toe" or club root disease are liable to occur, a dressing of about 2 tons per statute acre of burnt lime should be applied as soon as possible to land intended for turnips or cabbages. It would be a mistake to apply the lime to the stubble land before it is ploughed as lime tends to sink into the soil below the range of the plant roots, and if it were applied to land and ploughed down, it would be out of the range of young turnip plants. The best practice in such an instance is to apply the lime to the top of the ploughed land. Lime will prevent attacks of "finger and toe" disease only if it is applied in sufficient time to allow it to become incorporated with the soil before the turnips are sown or the cabbages planted. The time required for this incorporation to take place will usually be from four to six months. Lime should not be applied to land in which it is intended to grow potatoes next year, as recently limed land will likely produce tubers which are rough skinned and scabby.

Potatoes.—Tubers intended for seed should be separated from the ware potatoes, if this was not done at the time of digging, and placed in sprouting boxes. It is a great advantage to have the seed sprouted at planting time. The plants from seed which is well sprouted appear above ground comparatively soon, and grow very rapidly, and because of this sprouted seed may be planted later than seed which is not sprouted. This has the double advantage of giving more time for other spring work, and of having less weeds in the potato fields owing to the rapid growth of the tops which smother the weeds.

The initial cost of sprouting boxes is comparatively small and, if handled with care, these boxes will remain serviceable for many years.

When the tubers have been placed in boxes, the boxes should be put in a well-lighted shed or loft. If good strong buds are to be obtained the tubers must get plenty of light.

If the existing stocks of potatoes on the farm are not pure as regards variety, or if they have become deteriorated because of the presence of virus diseases, such as leaf-roll or mosaic, new supplies of seed certified to be true to variety and free from virus diseases should be obtained. The inspection of growing crops was again carried out last summer, and lists giving the

names and addresses of growers of certified crops have been published and may be obtained from the Ministry free. Crops which are particularly healthy have been listed separately as "stock seed". Every effort should be made to obtain this stock seed if a change of seed is contemplated.

Winter Wheat.—If not already done, winter wheat should be sown as soon as soil conditions are suitable; late sowing results in late ripening, and there is an increased risk of damage to the young plants by frost. For the average classes of soils Squareheads Master is a reliable variety, while for land in good condition Queen Wilhelmina has given good results. If any other varieties are under consideration for sowing, the Agricultural Instructor for the district should be consulted as to their suitability and cropping capacity before the seed is purchased. The wheat seed should, in all cases, be treated before sowing with one of the preparations, such as "Ceresan", "Agrosan G" or "Abavit", to prevent such diseases as "smut" and "leaf stripe", which are carried by the seed, from appearing in the crop. Full particulars of the method of applying the preparation, and of the quantity to use, are given on the package.

It is realised that with the prolonged harvest due to the unfavourable weather, the sowing of wheat will likely present additional difficulties this season. Despite this, where suitable land is available and the sowing can be done reasonably early in the winter, it is wise to grow a small area of winter wheat on the farm.

Liming of Land.—Land which does not receive frequent dressings of lime will become sour and will not produce maximum yields. Cattle grazing on such land when in pasture will not thrive so well and will be more susceptible to disease than those grazing on land which is not in need of lime. For full returns from both crops and stock, it is therefore essential that all land should receive a dressing of lime every 8 or 10 years.

The question is often asked whether burnt lime or ground limestone is the better for the land. The answer depends very largely on the purpose for which the lime is being used. The following points of difference between the two forms of lime may be found useful in deciding which will be more suitable for a particular purpose.

(a) Ground limestone is slower in acting on the soil than burnt lime. It will therefore, be better to use burnt lime on very sour soils or where quick results are desired.

(b) Ground limestone may be applied with a manure distributor. With some types of machine it will be necessary to cover the ground more than once in order to apply a sufficiently heavy dressing, while other types of machine may be set in such a way as to apply ground limestone at the rate of as much as 3 tons per acre in one application.

(c) Since one ton of burnt lime will have the same effect on the soil as 36 cwt. of ground limestone, it will be necessary to apply 36 cwt. of ground limestone for every ton of burnt lime recommended for any piece of ground. For this reason if the cost at which ground limestone can be applied exceeds approximately half the cost at which burnt lime can be applied, the latter will be the more economical.

(d) Burnt lime has a slightly caustic action, and will consequently have a beneficial effect on ground infested with parasites. For the same reason it should not be applied to young grass, or to land which is shortly to be sown with grass and clover seeds.

(e) Ground limestone will have very little effect on the soil unless it has been ground into a very fine powder.

In general, a dressing of 1 ton burnt lime or of 36 cwt. of ground limestone per statute acre once in every rotation, will be adequate to maintain the land in a sweet condition.

Before applying lime to grassland the rough herbage should be mown off if it has not been eaten closely by stock. The ground will also benefit from a stroke of a grass harrow if the land is dry enough for harrowing.

Destruction of Rushes.—Where rushes are abundant and the land is not water-logged, considerable improvement can be effected by cutting the rushes close to the ground now, and applying a dressing of a phosphatic manure such as basic slag, gafsa rock phosphate or Semsol at the rate of 6 cwt. per acre. Following this treatment the young rushes which subsequently grow, being more palatable, are eaten by stock, and further strong growth is thus checked. If the rushes which grow next season are cut twice during the summer months, and the ground dressed next autumn with from $1\frac{1}{2}$ to 2 tons of burnt lime per acre, almost complete eradication of the rushes can be effected in most cases.

SEASONAL LIVESTOCK NOTES.

Winter Rations for Stock.—As the winter feeding period has now commenced, the problem of making up suitable and economical rations for stock should be carefully considered. To assist feeders in this connection examples of rations which have given good results are detailed on page 383 of this report. It should be remembered that although many of the ready-mixed rations on the market are quite satisfactory, the mixing of the rations on the farm will enable economies to be effected and thereby to reduce the cost of feeding.

Amount of Meal Mixture to Feed.—It is important that balanced rations should be fed in the correct amounts. In the case of cattle a supply of good hay and roots should be fed in addition to the meal mixture, and it is necessary to provide a constant supply of fresh, clean water.

Dairy cows should get 3 lb. of meal mixture for each gallon of milk produced. Thus a cow giving 2 gallons of milk per day should get 6 lb. of meal mixture along with hay and roots.

For fattening cattle about 3 lb. of the meal mixture given on page 385 should be fed per head daily at the commencement of fattening, and this allowance gradually increased until from 6 to 8 lb., depending on the age and size of the cattle, is being given to each animal per day towards the end of the fattening period. The addition of a little linseed cake to the ration is beneficial towards the finishing stages, as this food aids in producing a good finish in beef animals.

Water Supply during the Winter.—It is essential that cattle which are housed should have a constant supply of fresh, clean water. A dairy cow requires about 3 gallons of water for each gallon of milk produced. In order to consume this quantity the cow must have frequent opportunities for drinking. Best results are obtained when the water is laid on to the stalls supplying automatic bowls. If this is not possible, the cows should be offered water at least three times daily. It is a good practice to allow the cows out for a few hours each day except when there is frost or snow on the ground.

Store Cattle.—If possible, an open shed to which the animals can have access as and when desired, should be provided for store cattle during the winter. The shed should have a good roof and a dry floor, and should be kept well bedded with straw.

The store cattle should get hay or oat straw during winter, and an allowance of a meal mixture consisting of :—

2 parts by weight crushed oats.
1 „ „ maize meal.
1 „ „ decorticated earthnut cake.

This ration should be given at the rate of from 2 to 3 lb. per head daily.

Grooming of Cattle.—All classes of cattle tied in stalls will benefit from frequent grooming with a curry comb and brush. Grooming will improve the coat and stimulate the circulation of blood in the skin, thus aiding in keeping the animals in a healthy and thriving condition.

Lice on Cattle.—If cattle become infested with lice the irritation produced will make the animals discontented and restless, and thus prevent good thriving. A dressing of a 5 per cent. solution of Jeyes' fluid (1 part Jeyes' fluid in 20 parts water) or the application of a carbolic sheep dip, or of one of the washes recommended for the destruction of ox-warble fly maggots in cattle (see Leaflet No. 64, and Circular No. 13), will destroy lice. A second application of the wash should be given in about 10 days after the first.

Ringworm.—This malady is also often a source of trouble during the winter, and, unless steps are taken in time, it may spread rapidly on the affected beasts and to other cattle on the farm. A suitable treatment for this disease is to scrub the affected parts of the animals well with a hot soda solution made by dissolving 1 lb. washing soda in 1 gallon hot water. This will soften the crusts and enable them to be removed. These crusts contain virulent infective material which would spread the disease and should be gathered carefully and burned. After the crusts have been removed the affected parts should be treated with a 10 per cent. solution of copper sulphate made by dissolving 1 lb. copper sulphate (bluestone) in 1 gallon water. Further information regarding the control of ringworm is given in Leaflet No. 70.

Feeding of Sheep.—Breeding sheep will benefit considerably from a little hand feeding from now onwards. A suitable ration for this purpose is made up of :—

2 parts by weight crushed oats.
2 ,, ,, kibbled maize.
1½ ,, ,, linseed cake.

The quantity to be fed will depend on the quantity and quality of pasture available. If the grass is poor ¼ lb. per head per day should be given at the beginning of December, and the amount gradually increased until the ewes are receiving from ½ to 1 lb. per head per day at lambing time, so as to have them in good condition and able to supply sufficient milk for their lambs. This hand feeding is essential if early fat lambs are desired. Only limited quantities of roots should be fed to ewes before lambing—not more than one turnip per head daily.

Liver Fluke Disease.—This disease is sometimes responsible for heavy losses at this time of year, and in order to prevent attacks the sheep should be grazed on high dry ground as much as possible. Dosing the animals with carbon tetrachloride capsules should also be carried out periodically. Full particulars regarding the control of liver fluke disease are given in Leaflet No. 24. See also the note on page 394 of this report.

Rearing of Pigs.—Winter litters of pigs are often more difficult to rear than those farrowed during the spring and summer months. Suitable feeding, combined with good housing accommodation, aid in obtaining healthy, easily-reared litters during the winter months.

Sows suckling litters should be well fed so that the flow of milk may be encouraged, while fresh green food such as cabbages, kale, etc., should be provided daily. A run out during fine days on fresh clean pasture is also an advantage. During the winter it is a good practice to give suckling sows an ounce (about half a wineglassful) of good quality cod liver oil in their food.

Young pigs may also be given a teaspoonful of cod liver oil per head in their food.

Young pigs should be encouraged to eat from an early age. In order to prevent the sows from eating the food given to the young pigs, a "creep" should be fitted in the pen. These "creeps" are made by railing off one corner of the pen in such a way that the small pigs have free access to a trough in the corner, and the sow prevented from reaching it.

If separated milk is available it should be fed to young pigs during the winter months. Separated milk is usually given at the rate of one quart per head daily along with a meal mixture. Particulars of suitable meal mixtures for young pigs, and for fattening pigs, are given in Leaflets Nos. 45 and 35 respectively, and on page 385 of this report.

During mild dry days it is an advantage to allow sows and young pigs out for a run on fresh, clean pastures throughout the winter months.

SEASONAL GARDEN AND ORCHARD NOTES.

Planting Fruit Trees.—Although the trees may be planted any time during winter when the soil is in a workable condition, it is advisable to get this work done as early as possible. A better selection of trees is obtainable early in the season than later when the pick of the nursery stock will have been sold. Cultivation of the ground should be arranged beforehand, the soil cleaned, and, if necessary, manured. A crop of potatoes is a good preparatory crop in ground intended for fruit trees. Three-year-old trees are suitable when cropping is wanted as soon as possible after planting. Before planting, all damaged roots should be cut off with a sharp knife and the remaining roots should be spread their full length and covered with fine soil. During the planting process the tree should be shaken thoroughly so that the soil falls between the fibrous roots, at the same time keeping the roots to the surface as much as possible without exposing them. Tramp the soil firmly with the feet and drive a strong stake into the ground close to the tree, to which it should be tied securely.

Suitable Varieties of Fruit.—Most people require a few trees each of eating and cooking varieties of apples. Good dessert varieties are Worcester Pearmain, Allington Pippin, and Charles Ross, and good cookers are Early Victoria, Grenadier, Lane's Prince Albert, and Bramley's Seedling. These when cropping should give a fairly continuous supply of fruit for the autumn and winter. The most suitable varieties of plums for cropping are Victoria and Czar. As regards pears, Conference and Fertility are both good croppers, but they require a sheltered sunny position. Further information regarding varieties is given in Leaflet No. 15.

For orchard planting, Bramley's Seedling is, of course, the main variety. The trees grow to a large size and should be interplanted with filler trees. The filler tree is usually a smaller growing variety such as Grenadier, and occupies the ground until the Bramley's trees require more space, when the fillers have to be removed. When contemplating orchard planting it is advisable to call in the Horticultural Instructor for the district, who will be able to advise as to the suitability of the soil and district for fruit growing.

Renovating Old Trees.—The present is a suitable time for this work. Usually the first operation will be to thin overcrowding branches by cutting out the badly placed ones. This will admit air and sunlight to the centre of the tree and help the remaining branches to make fruiting buds. All decayed shoots and dead wood should be cut away, also branches growing too close to the ground. When the trees have been neglected for a long period, and require drastic pruning, it is advisable to spread this work over two years, merely doing half the necessary cutting in the first year and completing the pruning in the following winter. All cuts made by pruning which are more than one inch in diameter should be painted with white lead paint made up as follows:—To 2 lb. white lead paste (as bought) add 2 teaspoonsful of paste driers and 2 tablespoonsful of linseed oil; mix and add 2 tablespoonsful of turpentine, mixing the whole well.

Spraying is the next operation, and should be done as soon as the pruning is finished. The most effective spray is a preparation of tar distillate of which there are various brands on the market. This wash should be applied thoroughly so that all the bark is wetted. It destroys the eggs of apple sucker and aphis hidden in the crevices of the bark. Spraying with tar-distillate may be done until well on in February, but, in the case of plums and damsons, and apple trees of the varieties Newton Wonder, Beauty of Bath and Gladstone, the spraying should be completed by the middle of January. The buds of these varieties may suffer injury if spraying is done later. Further particulars on the renovation of orchards, and the spraying of fruit trees, are given in Leaflets Nos. 9 and 33, respectively.

Manuring Apple Trees.—Trees in a bearing condition will benefit from an annual dressing of sulphate of potash applied at the rate of from 2 to 4 cwt. per acre. Most orchards will derive benefit from such a manuring, which may be applied this month or next month.

Vegetables.—As ground in the vegetable garden becomes vacant it should be dug or trenched as required. This work should be done early in the case of heavy ground. Any ground that requires draining should be attended to now. The most satisfactory type of drain for the garden or orchard is the tile drain, and if properly made should not require much attention for many years, provided the outlet is kept free of obstruction. Ditches and open drains should be cleaned and the outlets of drains cleared so that the drains may function properly during the winter.

Rhubarb.—Crowns intended for forcing should be lifted and left exposed for some time before being placed in the forcing quarters.

Fallen Leaves.—Leaves of deciduous trees should be collected and kept for use in making hot-bed material later.

SEASONAL POULTRY-KEEPING NOTES.

Feeding of Laying Stock.—Progressive poultry keepers are agreed that the extra care and attention required to maintain a high standard of production during the winter months are amply repaid by the general high level of prices for eggs at this season. If it is worth while to keep poultry at all it is more worth while to make a special effort to prevent egg production from falling off during the winter months.

Early hatched pullets, good housing and suitable feeding are the main essentials for obtaining high egg production during the winter. It is also important to ensure that the birds consume sufficient food for their requirements during the short winter days. A slightly heated mash, wet with separated milk, if available, should be given once daily, while the dry mash hoppers should be open to the birds at all times. Examples of suitable laying mashes for feeding to hens are given on page 386 of this report, and also in Leaflet No. 5.

Grain Feeding.—Two feeds of grain, one in the morning and the other before the birds go to roost, should be given daily during the winter months. A suitable grain mixture for the morning consists of equal parts of cracked maize and oats. If home grown wheat is available this may be included in the mixture, which should then be 2 parts cracked maize, 1 part oats and 1 part wheat. The morning feed of grain should be scattered in the litter on the floor of the house, while the evening allowance should be given in a trough just before the birds go to roost, and may consist of cracked maize only if the weather is very cold.

Drinking Water.—An adequate supply of fresh, clean water should always be available. If the water is cold or frozen the birds will not drink sufficient for their requirements and, accordingly, during spells of cold weather it is an advantage to heat the water slightly.

Green Food and Shell Making Material.—Green food in the form of cabbage leaves or kale or other such plants should be provided for the laying flock throughout the winter. Green food improves the stamina of the birds, and will enable them to withstand the severity of the winter production period. Shell making materials are required by the hen not only to enable her to produce eggs but to shell them properly. Oyster shell, limestone grit, or a mixture of these two, are suitable forms of shell making material.

Housing and Management.—Unless the birds are properly housed and managed good laying results cannot be expected. The houses should be dry, well-lighted, well-ventilated, free from draughts, and capable of providing ample perching and scratching accommodation. Birds will do best if kept inside during cold, wet days, and sufficient housing space should be provided to enable this being done. Overcrowding is conducive to the development and spread of disease, and should therefore be avoided.

Litter.—The litter should be changed frequently and never allowed to remain in the house after it has become soiled and damp, as such litter will harbour the parasites, causing various ailments and diseases. It is a good plan to put a patch of cinders around the door of the house, as this will prevent the ground becoming muddy and will aid considerably in obtaining clean eggs. Soiled eggs are now classed as "seconds" and are subject to heavy deductions from the standard price; consequently every effort should be made to prevent the hens' feet and legs from becoming covered with mud. Read Leaflet No. 27—"How to keep eggs clean."

Feeding of Birds for Breeding.—If milk is available it should be given to the birds in the breeding pen at this time of year, as it is useful both for speeding up the start of laying and keeping the birds in a fit condition. The addition of one quart high-grade cod-liver oil to each cwt. of mash is also very beneficial; its use improves the fertility and hatchability of the eggs, particularly where the birds are in pens. The grain ration of the birds should contain some wheat and maize in addition to oats.

Mating of Birds.—Cockerels should be placed in the pens at least ten days before eggs for hatching are required, and it is a good plan to test fertility by setting a hatch under a hen before incubator lots are put down.

Preparations for Hatching.—Preparations should now be made for hatching. Incubators should be fully examined and tested to ensure that all parts are in good order. Particular attention should be paid to thermometers and capsules, as on the efficiency of these depend the maintenance of the proper temperature in the machine. The accuracy of the thermometer can be ascertained by testing it against a clinical thermometer in water heated to about blood heat. The capsule may be tested by holding it between the finger and thumb in a warm place. If the capsule is working properly it will expand when exposed to heat.

Disinfection of Incubators.—All incubators should be thoroughly washed and disinfected at the beginning of the hatching season, and again after each hatch is completed. A suitable method of disinfection is to fumigate the incubator with potassium permanganate and formalin. To do this two teaspoonsful of potassium permanganate crystals should be put in a tin saucer

placed on the egg tray, and two tablespoonsful of formalin poured over the crystals. The incubator door should then be closed tightly and not opened again for twenty-four hours. This treatment will be most effective if the incubator is warm, so the lamp should be lighted and the temperature raised before fumigation takes place. Full particulars regarding disinfection and fumigation of incubators and chicken rearing appliances are given in Leaflet No. 59. Hints on the management of incubators are given in Leaflet No. 20.

Turkey Fattening.—Special attention should be given to the feeding of fattening turkeys from now onwards. Such foods as barley meal, pollards, Sussex ground oats, or finely ground home-grown oats, and boiled potatoes and milk are excellent both for fattening and for producing white flesh.

Two feeds of soft mash should be fed in troughs daily, and only such quantities given as will be speedily cleared up. Should loss of appetite occur through over feeding, the omission of a meal, giving only sour milk to drink, will usually set matters right. After the evening mash has been eaten a supply of grain should be given to sustain the birds throughout the night.

Turkeys for Breeding.—Turkeys for breeding should be selected immediately and kept apart from the fattening flock. Only well developed birds of good quality, and with plenty of stamina and vigour, should be selected. If undersized birds are kept for breeding the progeny will be difficult to rear, and be of poor quality. The turkeys selected for breeding should have a free range and receive body building foods rather than fattening foods so as to keep them in good fit condition.

Geese.—Geese for marketing at Christmas should be confined to a small area and fed on a soft mash consisting of boiled potatoes, maize meal and buttermilk. The quantity of water supplied should be limited to encourage the birds to eat sufficient mash.

WINTER RATIONS FOR STOCK FEEDING.

Now that the winter feeding period has commenced, attention should be given to the compounding of rations for the various classes of farm stock. The feeding of stock during the winter period necessitates careful consideration if successful and profitable results are to be obtained. The animal during this period is dependent in most cases on the food given, and is not at liberty to choose its own food as it is when grazing. It is essential, therefore, to give the animal the various types of food that it requires. The output received from an animal, whether it be in the form of milk, beef or eggs, is governed largely by the feeding supplied, so that any deficiencies in the ration will have an adverse effect on the quantity and quality of output. Moreover, indifferent feeding may also adversely affect the health of farm stock, and thus increase the risk of the animals becoming affected with ailments and

diseases. It is, therefore, of the utmost importance that careful attention be given to the making up of rations, and that only suitable foods be used. The opinion is sometimes expressed that the use of properly balanced mixtures is a more expensive practice than the feeding of indifferent rations made up from the cheapest foods available. This is a fallacy which requires little consideration to dispel. The slightly higher cost of a good balanced meal mixture is more than offset by the better results obtained, and it is foolish economy to attempt to save expense by the use of cheap and unsuitable foods.

Home grown foods such as oats, barley and wheat, should be used where possible in compounding balanced rations. With the exception of milk, the majority of foods grown or produced on the farm are rich in starchy or fat-forming material, and low in protein content. As protein is essential for all stock for full growth, development and production, it is necessary on most farms to purchase foods rich in protein. Protein-rich foods are the most expensive to buy, so that it is important to purchase those which offer best value for money.

To assist farmers in the selection of foods to purchase the prices of the most commonly used cakes and meals are obtained at various centres each month by the Ministry, and from these prices the average costs of the foods are ascertained. The foods are divided into three main groups (a) protein-rich foods, (b) medium protein-rich foods, and (c) starchy foods. Particulars of the average prices at which these are offered, along with a description of the method of comparing the prices of various foodstuffs, are given in each Monthly Report (see page 403 of this report).

Using this information, it can be easily ascertained which food in a particular group offers best value for money. Thus rations which are economical and at the same time suitable can be compounded.

Given below are examples of suitable rations for various classes of farm stock. Where adequate supplies of separated milk, skim milk or buttermilk are available, the protein-rich foods, i.e., soya bean meal, meat meal and fish meal, and the mineral mixtures may be omitted from the rations for pigs and poultry.

Formula (parts by weight).	Average Composition of Mixture.	Cost of 1 ton of the mixture at current average prices of feeding stuffs.
For Dairy Cows.		
(1) 3 parts crushed oats 2 parts maize meal 1 part red bran 2 parts decorticated earthnut cake.	19.0 per cent. protein 5.9 per cent. oil 7.0 per cent. fibre	£7 14s. 6d.
(2) 2 parts maize meal 1 part pollard 1 part bran 1½ parts decorticated cotton cake.	20.5 per cent. protein 5.0 per cent. oil 5.5 per cent. fibre	£8 10s. 6d.

Formula (parts by weight).	Average Composition of Mixture.	Cost of 1 ton of the mixture at current average prices of feeding stuffs.
For Fattening Cattle. 2 parts crushed oats 2 parts maize meal 1 part decorticated earthnut cake	17.0 per cent. protein 5.5 per cent. oil 5.5 per cent. fibre	£7 12s. 0d.
For Young Growing Cattle. 2 parts crushed oats 1 part maize meal 1 part decorticated earthnut cake	19.0 per cent. protein 5.8 per cent. oil 6.4 per cent. fibre	£7 13s. 6d.
For Fattening Pigs. (1) 2 parts barley meal, or tapioca root flour 2 parts maize meal 2 parts pollard 1 part flaked maize 1 part bran 1 part meat meal (60% protein)	17.5 per cent. protein 3.7 per cent. oil 4.0 per cent. fibre	£8 10s. 0d.
(2) 3 parts barley meal, or tapioca root flour 3 parts maize meal 2 parts pollard 1 part bran 1 part meat meal (60% protein)	17.0 per cent. protein 3.8 per cent. oil 4.0 per cent. fibre	£8 7s. 0d.
For Sows with Litters 3 parts maize meal 1 part flaked maize 2 parts red bran 2½ parts brown pollard 1½ parts high grade meat meal with from 1 to 2 lb. mineral mixture (3 parts ground limestone and 1 part salt) to each cwt. of meal mixture.	19.5 per cent. protein 3.6 per cent. oil 4.2 per cent. fibre	£8 16s. 6d.
For In-pig Sows 4 parts maize meal 4 parts brown pollard 2 parts red bran	14.0 per cent. protein 4.0 per cent. oil 5.0 per cent. fibre	£7 11s. 0d.
For Young Chickens. 4 parts bran 2 parts sharps (fine pollard) 1 part Sussex ground oats 1 part maize meal 1 part fish meal (60% protein)	18.2 per cent. protein 4.0 per cent. oil 6.5 per cent. fibre	£9 15s. 0d.
For Growing Birds. 3 parts bran 4 parts sharps 2 parts Sussex ground oats 1 part maize meal ¼ part fish meal or meat meal	13.5 per cent. protein 4.3 per cent. oil 6.5 per cent. fibre	£9 0s. 0d.

Formula (parts by weight).	Average Composition of Mixture.	Cost of 1 ton of the mixture at current average prices of feeding stuffs.
For Laying Pullets.		
(1) 4 parts pollard 2 parts bran 2 parts maize meal 1 part Sussex ground oats 1 part fish meal (60% protein)	17.0 per cent. protein 4.5 per cent. oil 5.0 per cent. fibre	£9 9s. 0d.
(2) 4 parts pollard 2 parts bran 2 parts maize meal 1 part Sussex ground oats ½ part fish meal ¾ part soya bean meal ½ lb. common salt per cwt. meal mixture	16.8 per cent. protein 4.0 per cent. oil 5.4 per cent. fibre	£9 5s. 0d.
For Poultry Breeding Stock. 3 parts bran 2 parts pollard 2 parts coarsely ground wheat 2 parts maize meal 1 part fish meal or meat meal 1 pint cod-liver oil to each 4 stones of mash.	17.4 per cent. protein 3.7 per cent. oil 4.7 per cent. fibre	£10 3s. 6d.

The average percentages of protein, oil and fibre of each ration is given in the middle column. These figures are applicable in the case of rations made from foods of good average quality. The composition of the mixture will also be of great value to those who purchase proprietary, ready mixed rations. In accordance with the Fertilisers and Feeding Stuffs Act the seller of a ready mixed ration must give to the purchaser a declaration showing the percentages of oil, protein and fibre contained in the ration. Purchasers should demand this declaration when purchasing a ration. If the figures given in the declaration differ substantially from those in the table above in respect of the ration for the class of stock for which the mixture is being purchased, the mixture has either been prepared from foods of inferior quality, or the foods have not been blended in the proper proportions. The percentage of protein should be as high as that stated in the composition figures above, and the percentages of oil and fibre should not be appreciably higher.

The figures in the right-hand column of the table represent the cost of one ton of the ration, based on the average current prices of the foods comprising it. These costs do not include any allowance for mixing but by adding a reasonable sum for this process, the farmer can determine whether or not the price asked for a ready mixed ration is reasonable. If it seems that the price asked for the ready mixed ration is appreciably higher than the cost of the home mixed ration it will be obvious that a reduction in feeding costs will be effected by buying the various meals and mixing the ration on the farm.

If the quality of a ready-mixed ration is suspected to be inferior, the Agricultural Instructor for the district should be consulted before purchases are made.

ANNOUNCEMENTS AND REMINDERS.

GENERAL.

Licensing of Bulls and Boars.—Bulls which were calved during the first six months of this year must be licensed by the 31st March, 1939. Boars which were farrowed on or before 30th September, 1938, must be licensed by the 31st January, 1939. Applications for licences for both bulls and boars of these ages should be lodged with the Ministry as soon as possible, but not later than the 31st December next. Application forms may be obtained from any Police Barracks, from the Secretary, County Committee of Agriculture, or from the Ministry. The keeping of unlicensed bulls or boars is likely to lead to a prosecution.

Premium Bulls.—Farmers wishing to keep premium bulls in 1939 should make application immediately to the Secretary, Committee of Agriculture for the County in which the applicant resides.

Supply of Forest Trees.—The Scheme for the supply of young forest trees from the Ministry's nurseries to farmers at reduced prices is again in operation. Full particulars will be sent on request.

County Poultry Stations.—Eggs for hatching may now be obtained from the County Poultry Stations. Lists giving the names and addresses of station holders can be obtained from the Secretary of the County Committee of Agriculture free, on request.

Accredited Poultry Farms.—The Accredited Poultry Farms Scheme is again in operation this season, and lists giving the names and addresses of owners of these farms from whom hatching eggs may be obtained will be available soon and will be sent free, on request. Copies of this list of accredited farms can also be obtained from the Secretary of the County Committee of Agriculture or from the Poultry Instructor for the district.

Report of Sixteenth Egg-Laying Test at Stormont.—This report is now being printed and copies will be available soon.

Meeting of Poultry Breeders.—The annual meeting of poultry breeders, at which the cups, medals, etc., won at the Ministry's laying test will be presented to the winners, has been provisionally arranged to be held in Belfast on Friday, 2nd December, 1938.

Leaflets.—A list of leaflets published by the Ministry is given on the last page of this report. Any of these leaflets can be had from the Ministry free, on request.

WINTER AGRICULTURAL CLASSES.—The following table gives particulars of the centres, class days, opening dates, etc., of agricultural classes arranged by County Committees of Agriculture for the incoming winter:—

County	Centre	Building in which class in being held	Opening day and date	Class days	Time at which class is held
Antrim	Lylehill	Rickamore School	Mon. 7th Nov.	Mon. & Wed.	1-30 p.m. to 6-0 p.m.
,,	Straid	Church Hall	Wed. 9th Nov.	Tues. & Thur.	,,
,,	Ballymoney	Town Hall	Mon. 31st Oct.	Mon. & Tues.	,,
,,	Portglenone	Orange Hall	Wed. 2nd Nov.	Wed. & Thur.	,,
Armagh	Breagh	Church Hall	Mon. 7th Nov.	Mon. & Wed.	2 p.m. to 6-30 p.m.
,,	Ahorey	Lecture Hall	Tues. 8th Nov.	Tues. & Fri.	,,
Down	Legacurry	Church Hall	Mon. 7th Nov.	Mon. & Tues.	1-30 p.m to 6-0 p.m.
,,	Ballyhalbert	Orange Hall	Wed. 9th Nov.	Wed. & Thur.	,,
,,	Castlewellan	New School	Mon. 7th Nov.	Mon. & Tues.	,,
,,	Mayobridge	Parochial Hall	Wed. 9th Nov.	Wed. & Thur.	,,
Fermanagh	Derrylin	Hibernian Hall	Tues. 15th Nov.	Tues. & Thur.	1-30 p.m. to 5-45 p.m.
,,	Irvinestown	Old Workhouse	Mon. 14th Nov.	Mon. & Wed.	,,
Londonderry	Maghera	Assembly Hall	Mon. 7th Nov.	Mon. & Tues.	2 p.m. to 6 p.m.
,,	Ringsend	Old School	Wed. 9th Nov.	Wed. & Thur.	,,
Tyrone	Drumquin	Marshall's Hall	Mon. 7th Nov.	Mon. & Wed.	1 p.m. to 5.15 p.m.
,,	Plumbridge	Ward's Hall	Tues. 8th Nov.	Tues. & Thur.	,,
,,	Eskra	The Hall	Mon. 7th Nov.	Mon. & Wed.	2-0 p.m. to 6-15 p.m.
,,	Brackey	Old School	Tues. 8th Nov.	Tues. & Thur.	,,
,,	Galbally	The Hall	Mon. 7th Nov.	Mon. & Wed.	2-0 p.m. to 6-15 p.m.
,,	Caledon	Old School	Tues. 8th Nov.	Tues. & Thur.	,,

The instruction provided at the above classes is free and young men engaged in farming in the districts mentioned above are strongly urged to attend one of these classes. In addition to a comprehensive study of the technical side of agriculture practical problems of everyday work on the farm will be dealt with. Moreover, the instruction will be arranged to suit farming methods and practices in the districts in which the classes are held.

CLASSES IN POULTRY-KEEPING.—The following classes have been arranged by the County Londonderry Committee of Agriculture:—

Centre.	Day and date of Commencement of Class.	Time at which class is held.
The National Hall, Bellaghy	Monday, 7th November	3-30 p.m.
Tartnakelly P.E. School	Monday, 7th November	4-0 p.m.

These classes will be held three days each week for a period of five weeks. Practical and tutorial instruction in poultry-keeping will be given and poultry-keepers in these districts are strongly advised to attend.

LECTURES.—The following lectures have been arranged by County Committees of Agriculture.

County	Day & Date	Centre	Time	Subject
Armagh	Thurs., 17th Nov.	P.E. School, Camly McCullagh, Newtownhamilton.	7-30 p.m.	Profitable Poultry-keeping.
	Tues., 22nd Nov.	P.E. School, Derrycughan, Markethill.	7-30 p.m.	do.
	Thurs., 24th Nov.	P.E. School, Mullaghduff, Altnamackin, Newry.	7-30 p.m.	do.
	Friday, 25th Nov.	Cormeen P.E. School, Cormeen, Killylea.	8-0 p.m.	Lime and the Land.
	Monday, 28th Nov.	P.E. School, Bluestone, Portadown.	8-0 p.m.	do.
	Tuesday, 29th Nov.	P.E. School, Kingsmills, Whitecross.	7-30 p.m.	Profitable Poultry-keeping.
	Wed., 7th Dec.	P.E. School, Lisnadill, Armagh.	8-0 p.m.	Agricultural Topics.
Down	Friday, 18th Nov.	Cooke Hall, Killyleagh.	7-30 p.m.	Grassland and Fertility.
Tyrone	Wed. 23rd Nov.	Ardbarron Hall, Clare, Castlederg.	7-0 p.m.	The Land Fertility Scheme.

BROADCAST TALKS.—The following arrangements regarding talks and discussions on subjects of interest to farmers to be broadcast from the Northern Ireland station of the British Broadcasting Corporation, have been made:—

Date	Subject	Speaker
28th November	Use of Lime and Fertilisers.	Professor R. G. Baskett, Queen's University.
12th December	Discussion—Market Gardening.	Messrs. A. E. Johnston, Ministry of Agriculture, and J. Clelland, Ballymoran, Killinchy, Co. Down.

RESULTS OF POTATO VARIETY TRIALS AT NORTH WEST SCHOOL, STRABANE.

The farm attached to the North West School is utilised to a large extent for the propagation and testing under farm conditions of new varieties of oats and potatoes. Thus, promising varieties and selections of oats made by the Ministry's Plant Breeding Division are grown in field plots on this farm, and the produce is distributed to selected farmers for growing in extension plots.

Similarly, plots of the newer varieties of potatoes are grown each year and the produce utilised for distribution to the County Instructors for growing in their variety tests at different centres throughout their districts.

Besides providing seed for these plots, the growing of the different varieties under similar conditions offers an opportunity for comparing the yields, and this opportunity is taken each year. In the table which follows are given the yields per statute acre obtained from the potato varieties stated during the years 1936, 1937 and 1938. The average yield from each variety which was grown during each of these three years is also given.

Variety.	1938		1937		1936		Average for 3 years' tests.	
	Ware and Seed	Total	Ware and Seed	Total	Ware and Seed	Total	Ware and Seed	Total
	T. c.	T. c.	T. c.	T. c.	T. c.	T. c.	T. c.	T. c.
Earlies								
Arran Pilot	18 12	18 19	16 16	17 16	13 15	14 12	16 8	17 2
Ballydoon	18 5	19 0	15 0	16 8	15 11	15 19	16 5	17 2
Dunbar Yeoman	16 0	16 12	16 5	17 8	11 16	12 7	14 14	15 9
Di Vernon	12 7	12 14	16 6	17 7	14 0	14 17	14 4	14 19
2nd Earlies								
Ulster Monarch	25 0	25 10	21 0	21 10	18 8	18 19	21 9	22 0
British Queen	17 17	18 12	14 16	15 12	15 0	16 0	15 18	16 15
Dunbar Rover	17 10	17 12	Not tested during these years.					
Early Main Crops								
Majestic	20 17	21 12	19 2	19 10	15 5	16 3	18 8	19 2
Arran Peak	20 14	21 1	17 8	18 1	15 18	16 18	18 0	18 13
Gladstone	20 5	20 12	18 7	18 15	13 14	13 19	17 9	17 15
Main Crops								
Dunbar Standard	19 2	19 7	20 0	20 5	16 0	16 10	18 7	18 14
Kerr's Pink	21 5	21 12	15 0	15 10	16 0	16 18	17 8	18 0
Arran Victory	20 5	20 15	17 11	17 19	14 2	14 9	17 6	17 18
Up-to-date	17 0	17 7	11 2	12 2	12 7	13 8	13 10	14 6
Redskin	20 10	21 0	Not tested during these years.					

These results show that Ulster Monarch has produced the heaviest crop in each of the three years, and that Majestic, on the average of the three tests, is second. Gladstone, which is a variety resembling King Edward, and popular on the British market, gave very satisfactory yields in 1937 and 1938. The new varieties, Dunbar Rover and Redskin, also produced good crops. The latter variety resembles Kerr's Pink, and gave a yield which corresponded closely with the yield produced by that variety. Of the main crops, Dunbar Standard gave the highest average yield over the three years' tests.

SCHEME FOR IMPROVEMENT OF AGRICULTURAL HOLDINGS.

It is thought that some farmers may not be fully aware of the financial assistance which is provided by the above-mentioned Scheme towards the cost of carrying out various kinds of necessary land improvement works. For the information of those who may not be familiar with the Scheme it may be pointed out that farmers can obtain grants up to 85 per cent. of the cost of labour engaged specially through the medium of the Employment Exchanges for carrying out approved works of land improvement such as making field drains, improving watercourses, ditches and river and sea embankments, stubbing whins, reclamation of land, making and repairing farm roads, construction of flax dams and excavation of wells.

Grants of 85 per cent. of the labour cost are available in the case of holdings of which the Poor Law Valuation does not exceed £100, but for farms with a Poor Law Valuation between £101 and £150, and between £151 and £200, slightly reduced rates of grant are payable.

Since the inception of the Scheme nine years ago close on 5,000 schemes of work have been approved, more than 7,000 unemployed labourers have been employed on approved works, and over £50,000 has been paid in grants in respect of completed works. The works carried out under the Scheme cover a wide range of farm improvements, and some 45,000 acres of land have already been drained or otherwise improved. Considerable areas that were formerly derelict and unproductive have been brought into cultivation. Whins have been stubbed over a wide area. Hedges have been rooted out, and embankments levelled to enlarge fields to facilitate tillage operations. Fences have been erected and repaired, and many other useful improvements of a general nature have been effected. As a result of the decision about a year ago to extend the scope of the Scheme to cover the construction and repair of farm roads, and the excavation of wells, many miles of farm roads have been improved by widening and resurfacing. The necessity for carrying out work of this nature on farms has become more acute within recent years in view of the extent to which farm produce is now conveyed by motor transport direct from the farm. Many farmers have also availed themselves of the opportunity to provide water supplies on their farms at very low cost to themselves. It should be noted, however, that the grant does not apply to the sinking of deep wells or to wells which, because of the strata, have to be sunk by expert workers.

That the facilities provided by this Scheme in its present form are fully appreciated by farmers is evidenced by the fact that during the present year applications have been received at a rate more than ten times greater than in

previous years, and in the six months ended 30th September last grants totalling £14,500 were paid by the Ministry.

Full particulars of the Scheme, together with a copy of the prescribed form of application for grant, will be forwarded by the Ministry on request. Farmers should note, however, that on no account should works be undertaken before the Ministry has notified its approval.

BLOOD TESTED POULTRY STOCK—A WARNING.

From now onwards for the next few months poultry keepers will be hatching and rearing chickens, and on the success or otherwise of this work will depend largely the ultimate results next autumn and winter from the poultry flocks. It is now agreed that to make a financial success of poultry keeping there must be satisfactory egg production from the birds during the autumn and winter when egg prices are at the highest point for the year. To get good production in autumn and winter there must be present on the farm a flock of early hatched pullets and these pullets must be housed comfortably and fed suitably.

But the egg production during the autumn and winter is not the only criterion by which to determine whether or not the birds have been profitable. It is possible to get very good production during the autumn and winter and yet to find that poultry keeping has not been a paying proposition. The most expensive item in egg production is the obtaining of the birds, and if hatching and rearing results are bad or if a high proportion of the pullets die before they have paid for the cost of producing them, the profits from those which live will be small, if not completely absent. Unless, therefore, the pullet flock can be produced and brought to the laying stage at a reasonable cost, and unless the birds pass through the first laying season with few casualties, there is not much prospect of making profits.

There are many causes of poor hatches and of excessive mortality, both during chickenhood and when the pullets are in production, and some of these, unfortunately, are difficult to counteract or prevent. There are some causes, however, which the poultry keeper can control—causes which are responsible for much of the wastage in chicken flocks and in flocks of pullets. Probably the most frequent cause of high mortality amongst flocks of laying pullets is the use of unsound, immature and weakly breeding stock. Healthy, vigorous pullets which have the stamina to withstand the exacting requirements of heavy and maintained egg production cannot be bred from such stock and the first essential, therefore, in obtaining birds which will live is sound, vigorous, healthy and mature breeding stock.

Leaving out of account the losses in hatching and rearing which are due to faulty methods of management, the two most prevalent causes of deaths amongst chickens are the diseases Coccidiosis and Bacillary White Diarrhoea. The former is contracted and spread by rearing the chickens on land which is infected with the causative organisms of the disease and may be largely prevented by adopting measures which will prevent the chickens from picking up the infection from the soil. Bacillary White Diarrhoea is, however, in a different category. This is an infectious disease which is handed on to the chicken by the hen which laid the egg from which the chicken was hatched. One infected chick is sufficient to spread the disease amongst an entire hatch and there is no known cure. Owing to the highly infectious nature of this disease, to the fact that it causes a very high mortality amongst chickens, that there is no cure and that even if birds do survive an attack they will harbour the infection and spread it to their chickens, it is of the utmost importance that vigorous steps should be taken to suppress it and to guard against its appearance. Fortunately, the blood test provides a satisfactory means of determining whether or not a bird is harbouring the infection and, accordingly, the blood testing of poultry has now become a routine practice on all progressive farms.

There are, however, certain aspects of blood testing which should be understood so as to enable the practice to provide the maximum measure of protection against the disease. The taking of a sample of blood from a hen, and the testing of this sample in a laboratory will not of themselves have any magic effect on that particular hen; if the hen is a "carrier" of the disease the test will merely show that she is, and will not do anything which might be regarded as having changed her from a "carrier" to a healthy bird. It is, therefore, obvious that blood testing is simply a means of identifying the birds which do and do not harbour the germs of the disease; it is the essential preliminary to the culling and selection of the birds for breeding. If there are any reactors or "carriers" in the flock, one test is not sufficient and, before eggs are used or sold for hatching, retests are necessary so long as even one reactor is found. The disease is spread from hen to hen by the birds picking up the causative germs from the soil on which they are running. If, therefore, reactors have been found in a flock it is necessary to remove those birds which pass the test, to fresh, clean ground so as to guard against their being infected through picking up the germs from the contaminated ground. If this is not done, it will be found that there will be reactors repeatedly appearing in subsequent tests and that it will be practically impossible to maintain a reactor-free flock.

There has been a good deal of misinterpretation and abuse of the blood test by misguided and misinformed breeders and this has led to disappointments in the cases of both the sellers and the buyers of eggs for hatching. It is only when all the birds have been tested, the reactors (if any) removed

and retesting done until the flock is free from reactors, that a breeder can properly use the description "Blood tested stock". There have been instances where poultry keepers have had only a proportion of the birds tested, where the reactors had not been removed, where they were removed but no further testing was done, and in some at least of these instances the owners described the stock as "blood tested" in advertisements of hatching eggs for sale. Such a practice is unconditionally condemned. It is unfair to the breeder, to the purchaser and to the blood test. The purchaser of eggs for hatching who understands and appreciates the value of the blood test is entitled, in view of such an advertisement, to receive eggs from birds which were tested in accordance with the recognised standards of freeing a flock from reactors and if the programme of testing falls short of that standard the advertiser is morally guilty of misrepresentation. Purchasers of eggs for hatching are strongly advised to insist on seeing the report of the laboratory which carried out the testing if any doubt exists as to the accuracy of the statement regarding testing which appears in an advertisement. Breeders are advised not to mislead their customers but to have the testing of their flocks done thoroughly; the reactors, if any, removed, and retesting done if the first test revealed the presence of reactors. The terms " Blood tested stock", "100 per cent. blood tested", etc., are meaningless and misleading. "Blood tested and all passed", "All blood tested—no reactors" or such like term would be both informative and business-like.

Further, the fact that birds are bred from blood tested stock which passed the test is no guarantee that they themselves are free from the disease. These birds may contract the disease during the rearing and growing period and must be blood tested before they can be described as disease-free.

Under the Ministry's scheme for the accreditation of poultry farms and the Scheme of County Poultry Stations administered by County Committees of Agriculture an essential condition is that all the adult birds on the farm must have passed the blood test. In the case of such farms, therefore, it is quite proper to describe the birds as "blood tested and 100 per cent. passed the test".

LIVER FLUKE DISEASE PRECAUTIONS.

Liver fluke disease is particularly to be dreaded during wet seasons. Most sheep owners are aware of the fact that the fluke worms which cause the disease require the presence on the land of a small snail in which to spend part of their life. If such snails were absent from the land liver fluke disease would not appear amongst the sheep grazing on such land. This is why the advice is given to keep sheep off wet, low-lying pastures during the autumn and winter.

The present season has been exceptional as regards rainfall, and pastures which ordinarily would be dry and safe from fluke infection cannot be regarded as so, this season. It is, therefore, likely that many flocks of sheep are and have been grazing on pastures where fluke infection is present.

This being the case it is incumbent on all sheep owners to take immediate and effective measures to prevent the disease from making inroads on the flocks. Dosing the animals with carbon tetrachloride has been proved to be perfectly effective when carried out in time and repeated at suitable intervals.

The correct dose of carbon tetrachloride is one cubic centimetre and capsules, each containing this quantity, can be purchased. As bad results may follow the use of too large or too small a dose, only capsules guaranteed to contain the correct quantity of the drug, should be accepted. Further, as there are several kinds of fluke capsules offered for sale, those who wish to use carbon tetrachloride should ask specifically for capsules containing that drug and also ask for a guarantee of its purity.

Sheep to be dosed should be fasted overnight and in the case of those receiving hand feeding this should be stopped for at least four days prior to dosing and nothing but grass allowed to the sheep during that time.

All sheep owners are strongly advised to dose their sheep at once, and to repeat the operation every month throughout the winter and early spring if the disease becomes prevalent.

SCHOOL NEWS.

ULSTER DAIRY SCHOOL, COOKSTOWN.

For the term which commenced on the 11th October, the following new pupils were admitted to begin the course of training:—

Miss E. F. Boyd, Dungorbery, Ballyboyland P.O., Ballymoney, Co. Antrim.
Miss J. R. Calvin, Balteagh, Macosquin, Coleraine, Co. Londonderry.
Miss M. E. Campbell, Mowillian, Moneymore, Co. Londonderry.
Miss E. Croskery, Ballystokes, Downpatrick, Co. Down.
Miss E. J. Foster, Drumsoo, Magheraveely, Newtownbutler, Co. Fermanagh.
Miss J. M. M. Hall, Ballytresna, Randalstown, Co. Antrim.
Miss E. Horner, Ballyhenry, Comber, Co. Down.
Miss E. M. Jordan, Drummee House, Brookeborough, Co. Fermanagh.
Miss W. Kyle, Mullaslin House, Sixmilecross, Co. Tyrone.
Miss M. Lagan, Kirley House, Maghera, Co. Londonderry.
Miss B. P. Longstaff, Bank of Ireland, Ballybofey, Co. Donegal.
Miss S. E. Loughrin, Lisnanane, Sandholes, Dungannon, Co. Tyrone.
Miss M. M'Cluney, Dunsilly, Antrim.
Miss E. A. M'Farland, Straree House, Gortin, Omagh, Co. Tyrone.
Miss M. P. M'Gorty, Fassagh, Belleek, Co. Fermanagh.
Miss M. E. Shepherd, Burn Cottage, Ahorey, Portadown, Co. Armagh.
Miss F. L. Smyth, Dunena, Bailieborough, Co. Cavan.
Miss M. N. Steele, The Parks, Londonderry.
Miss M. E. Trueman, Drumlellum, Portadown, Co. Armagh.
Miss L. E. Watson, Dervaghroy House, Beragh, Co. Tyrone.

Applications for admission to the term, which will begin on the 3rd January, 1939, are now being received by the Ministry, and as applications are dealt with in the order in which they are received, girls who intend to take out a course of training should submit their applications to the Ministry as soon as possible. Copies of the prospectus, containing application forms, may be obtained free of charge from the Secretary of any County Committee of Agriculture, from the local Instructor in Poultry-keeping, from the Lady Superintendent, Ulster Dairy School, Cookstown, or from the Secretary, Ministry of Agriculture, Stormont, Belfast.

NORTH WEST SCHOOL, STRABANE.

The third term of the year 1938 ended at this School on the 30th September, and there were 24 pupils in the class all of whom held Scholarships awarded by the various County Committees of Agriculture. The number of scholarship holders from each County was as follows:—

County	Antrim	3
,,	Armagh	4
,,	Down	3
,,	Fermanagh	3
,,	Londonderry ..	6
,,	Tyrone	5

The following pupils are now in residence at the School as scholarship holders for the term which commenced on the 11th October:—

Co. Antrim.
Miss S. M'Ateer, Carmegrim, Portglenone.
Miss A. M. Morrison, Moycraig, Dervock.
Miss M. Morrison, Springwellknowe, Dervock.
Miss M. O'Kane, Carmegrim, Portglenone.
Miss M. P. Stevenson, Knockans, Finvoy, Ballymoney.

Co. Armagh.
Miss M. Largey, Ballymacnab, Tassagh.
Miss P. Martin, The Square, Crossmaglen.

Co. Down.
Miss K. Kelly, Backaderry, Leitrim.

Co. Fermanagh.
Miss M. Leonard, Kinglass, Macken P.O.
Miss K. M'Caffrey, Bohulkin, Tempo.
Miss S. Wilson, Springview, Derryhillogh, Enniskillen.

Co. Londonderry.
Miss R. Hasson, Ballyholey, Claudy.
Miss M. J. O'Donnell, Tamnagh, Park.
Miss M. J. Semple, The Mills, Dungiven.

Co. Tyrone.
Miss E. Devlin, Leardin, Gortin.
Miss M. Forbes, Lisnarrow, Dunamanagh.
Miss L. M'Farland, Laragh, Beragh.
Miss H. M. M'Guire, Cavanakirk, Clogher.
Miss M. J. Robinson, Carntall, Clogher.
Miss A. K. Woods, Lower Memore, Pomeroy.
Miss M. J. Young, Carncorn, Castlederg.

The County Committees of Agriculture are offering a limited number of scholarships to cover the cost of tuition, board and residence at this School for the session which will commence on the 3rd January, 1939, next, and girls desirous of being considered for the award of these scholarships should submit their applications as soon as possible to the Secretary or Agricultural Organiser of the County Committee of Agriculture for the County in which they reside. Copies of the school prospectus, which contains an application form, can be obtained from the Secretary of the County Committee of Agriculture, the local Instructor in Poultry-keeping, the Lady Superintendent, North West School, Strabane, or the Secretary, Ministry of Agriculture, Stormont, Belfast.

GREENMOUNT AGRICUTURAL AND HORTICULTURAL COLLEGE.

The undermentioned candidates who were successful in the recent competitive examinations for scholarships awarded by the various County Committees of Agriculture, are now in residence at the above College. Each Scholarship is of the value of £65, and is tenable during the session which commenced on the 11th October, 1938, and will terminate on the 31st July, 1939.

Co. Antrim.

M. Boyd, Sharvogues, Randalstown.
J. Campbell, Lisnisk, Dervock.
J. Crawford, Creavery, Randalstown.
D. Gardiner, Skerrywherry, Glenwherry.
J. Hunter, Ballybracken, Doagh.
D. Kenny, The Cottage, Ballygarvey, Ballymena.
D. M'Auley, Ballybrack, Cushendall.
J. M'Dowell, Irish Quarter West, Carrickfergus.
J. M'Dowell, Carnconlon, Milebush, Carrickfergus.
H. M'Kee, Eskylane, Randalstown.
R. Nutt, Carnaney, Ballymoney.
D. H. Patton, Livery Upper, Stranocum.
Wm. Wharry, Harphall, Carnlough.

Co. Armagh.

S. F. Barbour, Bolton, Mountnorris.
M. J. Duffy, Teer, Crossmaglen.
P. Murphy, Greyhillan, Whitecross.

Co. Down.

J. M. Adair, Mountalexander, Comber.
N. G. Andrews, The Hawe Farm, Ballymaconnell, Bangor.
J. Boyd, Kirkland, Toye.
F. Garrett, Ballyfrenis, Millisle.
J. M'Gaw, Katesbridge, Banbridge.
W. P. Girvan, Bresagh, Boardmills, Lisburn.
B. R. Harkness, The Barns, Hillsborough.
C. B. M'Cutcheon, 23 Ormiston Drive, Belfast.
A. G. M'Ferran, Ballyobican House, Ballywalter.
D. A. M'Mordie, Solitude, Ballygowan.
Wm. M'Nay, Craigboy, Donaghadee.
R. Morrison, Glasswater House, Crossgar.
R. J. Strain, Ballyroney, Banbridge.
S. A. G. Orr, Windrus, Victory Avenue, Newtownards.

Co. Fermanagh.

S. F. Crowe, Drumwhinney House, Kesh.
G. V. A. Latimer, Gortgorgan, Knockaraven, Enniskillen.

Co. Londonderry.

J. L. Crowe, Letterloan, Coleraine.
C. M'Cormick, Ballerin, Garvagh.
J. T. Semple, Derryduff, Dungiven.
R. Smith, Longfield, Eglinton.

Co. Tyrone.

S. A. B. Fulton, Ballylaw, Artigarvan, Strabane.
E. R. Giboney, 10 Dromore Road, Omagh.

In addition, the following fee-paying students are now in residence at the College :—

J. N. K. Campbell, 21 Maxwell Road, Bangor, Co. Down.
T. T. Conn, Sandyville, Magilligan, Co. Londonderry.
W. B. Dick, 46 Ballyholme Esplanade, Bangor, Co. Down.
J. L. Fleming, St. Katherine's, Killybegs, Co. Donegal.
J. S. Higginson, Craigavad, Co. Down.
J. L. Hudson, 120 Sandown Road, Belfast.
J. G. Peile, Fruitfield, Richhill, Co. Armagh.

SEVENTEENTH EGG LAYING TEST AT STORMONT.

The first period of four weeks ended on the 28th October, 1938. Moulting has been severe in a number of pens, as many as 235 pullets being in moult at the end of the period. The average egg production was 10.42 eggs per bird, as compared with 11.5 for the corresponding period of the previous test. The total number of eggs laid during the period was 7,943, and of this number 4,102, or 51.64 per cent. were scoring eggs (super grade and first grade).

The highest sectional average egg production is to the credit of the White Wyandottes in Section 1, viz., 12.09 eggs per bird, the White Wyandottes in Section 2, and the birds in Section 8 (Club Entries) being next with an average of 12.0 eggs per bird.

Four birds died during the period. This represents a mortality rate of 0.52 per cent. The rate during the first period of the previous test was 0.7 per cent.

The following are particulars of the leading pens in each Section :—

SECTION 1. WHITE WYANDOTTES (Open). 21 Pens.

Position	No. of Pen	Name and Address of Owner.	Number of eggs laid				Test Score
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	16	Mrs. A. Peel, Oakleigh, Roses Lane Ends, Belfast.	14	67	33	—	81
2	1	Mrs. K. Bamforth, Culmore House, Myroe, Co. Londonderry.	14	65	8	—	79
3	19	Mr. J. Stuart, Balloo, Killinchy, Co. Down.	2	63	62	1	65
4	8	Mrs. D. C. Gamble, Roan Lodge, Coalisland, Co. Tyrone.	12	52	20	—	64
5	12	Mr. J. Lenaghan, Tyconnett, Ballynahinch, Co. Down.	9	53	91	—	62

SECTION 2. WHITE WYANDOTTES (Stationholders). 10 Pens.

1	30	Mrs. M. J. Veitch, Knockninny, Thompson's Bridge, Enniskillen, Co. Fermanagh.	27	68	9	—	95
2	25	Miss A. Brown, Ballyhill, Crumlin, Co. Antrim.	10	60	31	—	70
3	22	Mrs. M. Rodgers, Ballyginney, Dundrum, Co. Down.	30	21	27	10	51

SECTION 3. WHITE LEGHORNS (Open). 10 Pens.

1	39	Mr. J. Telford, Drumarkin, Rathfriland, Co. Down.	7	54	36	1	61
2	41	Mr. J. Waugh, Aldfrech, Ballycarry, Belfast.	14	34	46	—	48
3	36	Mrs. E. Johnston, Craigboy, Donaghadee, Co. Down.	13	33	11	—	46

SECTION 4. WHITE LEGHORNS (Stationholders). 11 Pens.

1	44	Miss S. Craig, Ballyboley Junction, Ballynure, Co. Antrim.	17	55	36	—	72
2	52	Mrs. J. Short, Tullyvally, Seskinore, Omagh, Co. Tyrone.	7	39	60	1	46
3	50	Miss I. J. Magill, Mulloughdrin, Dromore, Co. Down.	1	36	49	5	37

SECTION 5. RHODE ISLAND REDS (Open). 29 Pens.

Position	No. of Pen	Name and Address of Owner.	Number of eggs laid				Test Score
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	73	Mrs. J. M'Neill, Drain's Bay, Larne, Co. Antrim.	32	52	7	—	84
2	66	The Marquis of Hamilton, Baronscourt, Omagh, Co. Tyrone.	17	57	12	—	74
3	69	Mr. J. M'Cormick, Crosshill, Crumlin, Co. Antrim.	4	62	8	—	66
4	67	Miss J. A. Irwin, Mount Irwin, Tynan, Co. Armagh.	3	53	13	—	56
5	74	Mr. R. J. O'Hanlon, Mullahead, Tanderagee, Co. Armagh.	23	31	38	1	54

SECTION 6. RHODE ISLAND REDS (Stationholders). 11 Pens.

1	92	Mrs. H. Rea, Lisowen, Listooder, Crossgar, Co. Down.	28	58	5	—	86
2	83	Mrs. H. H. Dickson, Lower Coagh, Co. Tyrone.	15	70	30	—	85
3	89	Miss S. M'Kee, Ardmillan House, Killinchy, Co. Down.	5	57	41	—	62

SECTION 7. ANY OTHER PURE BREED (Open). 25 Pens.

1	108	Mr. R. Holmes, Moneycarrie, Killykergan, Coleraine, Co. Londonderry. (Buff Rocks)	42	51	20	—	93
2	107	Mr. R. Holmes, Moneycarrie, Killykergan, Coleraine, Co. Londonderry. (Buff Rocks)	16	60	42	—	76
3	106	Mr. R. Holmes, Moneycarrie, Killykergan, Coleraine, Co. Londonderry. (Buff Rocks)	10	57	63	4	67
4	98	Mr. H. W. Merrick, Agivey House, Aghadowey, Co. Londonderry. (Light Sussex)	13	51	20	—	64
5	94	Mrs. E. R. Dunwoody, Benmore, Islandmagee, Co. Antrim. (Light Sussex)	2	53	50	3	55

SECTION 8. POULTRY CLUBS AND YOUNG FARMERS' CLUBS.

Position	No. of Pen	Name and Address of Owner.	Number of eggs laid				Test Score
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	123	Donaghadee Poultry Club, Co. Down. (Rhode Island Red)	11	58	21	—	69
2	124	Dungannon Poultry Club, Co. Tyrone. (White Wyandottes)	4	56	25	—	60
3	127	Ballywalter Young Farmers' Club, Co. Down. (White Wyandottes)	3	42	31	1	45

"Test Score" means the total of the super-grade and first-grade eggs.

Mrs. M. J. Veitch's pen, No. 30, of White Wyandottes in the Station-holders' Section for that breed, is first in the entire test, and second place is occupied by Mr. R. Holmes' pen No. 108 of Buff Rocks in Section 7.

PRICES OF FEEDING STUFFS AT SPECIFIED CENTRES.

The following table shows the retail cash prices per cwt. of Feeding Stuffs at 1st November, 1938, in ten representative centres in Northern Ireland.

	Antrim	Armagh	Ballymena	Belfast	Castlewellan	Coleraine	Dungannon	Enniskillen	Omagh	Strabane
Protein Foods :	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Linseed (whole)	13 0	16 0	16 0	16 0	—	17 6	—	16 6	—	—
Linseed Cake, home-made ..	—	13 0	12 0	12 0	—	12 6	13 0	12 0	12 0	—
Linseed Cake, foreign	11 6	12 0	11 0	11 0	—	12 0	11 6	10 6	11 0	10 9
Linseed Cake Meal	11 6	13 0	11 0	11 0	11 9	12 0	13 0	12 6	11 6	11 0
Cotton Cake, decorticated ..	9 3	—	9 3	10 6	10 0	9 0	9 6	10 0	9 3	9 6
Earthnut Cake, decorticated ..	9 0	—	9 0	9 6	—	9 0	9 0	9 3	9 0	8 9
Soya Bean Meal (extracted) ..	10 6	10 6	11 0	10 0	—	11 6	10 3	10 6	11 0	—
Fish Meal (60% protein) ..	17 0	17 0	16 3	16 6	—	16 6	16 6	16 6	17 0	16 6
Meat Meal (60% protein) ..	16 6	15 0	14 3	14 0	14 0	—	15 6	—	15 6	16 0
Meat and Bone Meal (40% protein)	—	10 6	9 6	9 6	—	11 0	9 6	—	—	11 0
Medium Protein Foods :										
Palm Kernel Cake	9 0	—	9 3	7 9	—	—	—	—	9 0	—
Palm Kernel Meal	9 0	8 6	9 3	7 9	—	—	—	—	—	—
Starchy Foods :										
Maize (whole)	7 0	7 1½	7 3	6 9	—	7 3	—	7 6	7 6	—
Maize Meal	7 3	7 4½	7 3	7 0	7 6	7 3	7 3	7 3	7 6	7 6
Maize Flaked	7 9	8 0	7 9	7 6	7 9	7 9	8 0	8 6	8 6	8 6
Wheat (whole)	7 0	7 0	—	6 6	7 0	7 6	7 3	8 0	—	—
Bran, Red	7 0	7 6	7 0	7 6	—	7 6	7 0	8 9	8 0	8 0
Bran, White	8 9	9 0	8 3	8 6	8 9	9 0	9 0	9 6	10 6	9 6
Pollard, Brown	7 6	7 6	7 0	7 6	—	7 6	7 6	8 6	8 3	8 3
Pollard, White	—	8 6	7 6	8 6	8 9	8 3	8 6	9 6	10 0	9 6
Barley Meal	7 3	7 6	7 6	7 6	7 3	8 6	7 9	8 0	8 6	8 0
Tapioca Root Flour	—	8 0	7 6	7 3	—	—	—	—	—	—
Oats (whole)	8 0	7 0	6 0	6 9	5 6	6 0	6 8	7 4	5 6	5 0
Crushed Oats	8 6	8 0	6 6	7 6	6 0	6 6	—	8 0	—	6 0

NON-CONCENTRATES :—The average prices at representative markets at the beginning of November, 1938, were as follows :—Potatoes (Main Crop), 2/8½d. per cwt. ; Upland Hay, 58/11d. per ton ; Meadow Hay, 42/6d. per ton ; Oat Straw, 39/5d. per ton.

AVERAGE PRICES OF FEEDING STUFFS.

The following table shows the average retail cash prices per cwt. of feeding stuffs at 1st November, 1938, with comparative prices as at the first of the previous month; the costs per unit of protein equivalent and of starch equivalent are also given in respect of each month.

	Protein Equivalent	Starch Equivalent	Average price per cwt. at 1st Nov. 1938	Average price per cwt. at 1st Oct. 1938	Cost per unit of protein equivalent Nov.	Cost per unit of protein equivalent Oct.	Cost per unit of starch equivalent Nov.	Cost per unit of starch equivalent Oct.
Protein Foods			s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Linseed	19.0	119.0	15 10	16 1	16 8	16 11	2 8	2 9
Crushed Linseed	19.0	119.0	17 7	18 1	18 6	19 1	3 0	3 0
Linseed cake (home-made)	25.0	72.0	12 4	12 7	9 10	10 1	3 5	3 6
Linseed cake (foreign)	25.0	72.0	11 3	11 5	9 0	9 2	3 2	3 2
Linseed cake meal	25.0	72.0	11 10	11 11	9 6	9 6	3 3	3 4
Decorticated Cotton cake	35.0	71.0	9 7	10 0	5 6	5 9	2 8	2 10
Decorticated Earthnut cake	41.0	73.0	9 1	9 5	4 5	4 7	2 6	2 7
Extracted Soya bean meal	38.0	64.0	10 8	10 7	5 7	5 7	3 4	3 4
Fish meal (60% pfotein)	53.0	59.0	16 8	16 8	6 3	6 3	5 8	5 8
Meat meal (60% protein)	55.0	61.0	15 1	15 2	5 6	5 6	4 11	5 0
Meat & Bone meal (40% protein)	36.0	44.0	10 2	10 3	5 8	5 8	4 8	4 8
Medium Protein Foods								
Palm kernel cake	17.0	75.0	8 9	8 10	10 3	10 5	2 4	2 4
Palm kernel meal	17.0	75.0	8 8	8 10	10 2	10 5	2 4	2 4
Starchy Foods								
Maize	6.8	81.0	7 2	7 4	21 1	21 7	1 9	1 10
Maize meal	6.8	81.0	7 4	7 8	21 7	22 7	1 10	1 11
Flaked maize	8.6	83.0	8 0	8 4	18 7	19 5	1 11	2 0
Wheat	9.6	72.0	7 2	7 11	14 11	16 6	2 0	2 2
Red bran	10.0	43.0	7 7	8 4	15 2	16 8	3 6	3 11
White bran	10.0	43.0	9 1	9 10	18 2	19 8	4 3	4 7
Brown pollard	11.0	60.0	7 9	8 7	14 1	15 7	2 7	2 10
White pollard	11.0	60.0	8 9	9 7	15 11	17 5	2 11	3 2
Barley meal	7.0	70.0	7 9	8 2	22 2	23 4	2 3	2 4
Oats	7.6	60.0	6 5	7 1	16 11	18 8	2 2	2 4
Crushed oats	7.6	60.0	7 2	7 11	18 10	20 10	2 5	2 8
Tapioca root flour	1.0	83.5	7 7	8 3	151 8	165 0	1 10	2 0
Non-Concentrates								
Potatoes	0.6	18.0	2 8½	2 10¼	90 3½	95 1½	3 0	3 2
Upland hay	4.9	24.0	2 11¼	2 10	11 11¾	11 6¾	2 5½	2 4½
Meadow hay	4.6	31.0	2 1⅝	2 2½	9 2⅝	9 7¼	1 4½	1 5¼
Oat straw	0.9	20.0	2 0	2 1	44 5½	46 3½	2 0	2 1

The object of the foregoing tables, besides providing information regarding the prices of feeding stuffs and the trend of prices, is to give purchasers a

guide as to the economic purchase of supplies. It should be understood that the price per ton is not a sound basis on which to judge whether or not a particular food or grade of a particular food is good value for money. The composition of the foods is the only basis on which different grades can be compared. The value of foods of different kinds, but of the same nature in reference to market prices, can also be compared on this basis.

In the case of an artificial manure which supplies only one fertilising ingredient as, for example, sulphate of ammonia, which supplies nitrogen, the cost of the unit of nitrogen at the price charged can be determined quite readily by dividing the price per ton by the percentage of nitrogen in the sample, and the figure thus obtained is the cost of a unit of nitrogen. By this method the most economical source of nitrogen can be ascertained. Similarly, in the cases of phosphatic and potassic manures.

With feeding stuffs, however, the same method cannot be applied to determine comparative values. This is because every feeding stuff contains three important food constituents in varying proportions. These are (1) carbohydrates, (2) oils or fats, and (3) proteins or albuminoids. The carbohydrates comprise a group of substances such as starch, sugar and cellulose. These substances supply heat or energy to the animal, and the surplus goes to form fat. They are the fuel which the animal requires to keep the body "fires" burning. The oils of a feeding stuff are also heat and energy suppliers, and the surplus is stored as fat. The oils are approximately $2\frac{1}{2}$ times more valuable than the carbohydrates as heat and energy producers, but excess in a ration may lower its digestibility and cause digestive troubles. The proteins are the most valuable and most expensive food constituent. They contain nitrogen and are the part of the food from which products which contain protein are chiefly made. Thus the protein products, such as lean meat, milk and eggs, are formed principally from protein, and young, growing animals, dairy cows and laying hens must have an adequate quantity of protein for full growth, development and production.

While all animals require a certain amount of carbohydrates, oils and proteins, the relative amounts depend on the class of stock. For example, a two-year-old fattening bullock requires much less protein than a dairy cow in milk and a fattening chicken less than a laying pullet.

There are wide differences in the composition of the different kinds of feeding stuffs. Some are rich in carbohydrates and, therefore, particularly valuable for fattening purposes. These include oats, maize, barley and wheat, and their products. Others are rich in protein and are valuable for producing flesh, milk and eggs. These include decorticated cotton cake, decorticated earthnut cake, meat meal and soya bean meal.

In the following table the composition of some of the commonly used feeding stuffs is shown—

	Water.	Protein.	Oil.	Carbohydrates.
Non concentrates				
Swede turnips ...	88	1	0.2	9
Potatoes	75	2	0.1	21
Cabbage	89	1.5	0.5	8
Oat Straw	14	4	2	37
Meadow hay ...	10	10	3	45
Pasture grass ...	80	3.5	0.8	10
Fattening Foods				
Crushed oats ...	13	9	6	60
Maize meal ...	12	10	4	70
Barley meal ...	13	12	2	66
Pollard ...	13	15	5	57
Flesh forming foods				
Decorticated Cotton cake	9	40	9	26
Decorticated Earthnut cake	10	46	7	23
Meat meal ...	11	60	6	—
Soya bean meal ...	11	44	1.5	32

The problem confronting the purchaser of feeding stuffs, who is concerned with the business of getting best value for money, is one which is much more difficult to solve than is the case with artificial fertilisers. There are at least four aspects of the problem to be considered:

(1) The quality of the different foods offered for sale. This can be determined by reference to the particulars of composition which a seller must give a purchaser in accordance with the Fertilisers and Feeding Stuffs Act.

(2) The physical condition of the foods, and if fresh or stale.

(3) The suitability of the foods for the purpose in view.

(4) The comparative values of the foods at the prices quoted.

The chief concern of this section of the Report is comparative values and, therefore, that aspect of the problem will be considered specifically.

The proteins play a part in the nutrition of the animal which cannot be taken by either carbohydrates or oils. In addition to this, the proteins, carbohydrates and oils have very different values for the production of energy or fat. It therefore follows that the simple procedure of totalling the percentages of these three ingredients and dividing this total into the price per ton in order to obtain a value for a unit of the food-stuff is quite unsound. Various methods have been used to compare the values of different feeding stuffs, but none is completely satisfactory. For practical purposes the least cumbersome is the

method whereby the food-stuffs are placed in groups of similar composition, and the values of the members of each group are then compared by consideration of (a) their protein equivalents, and (b) their starch equivalents. The starch equivalent is the number of pounds of starch which would be required to produce the same amount of "fat" in an animal as 100 pounds of the food-stuff in question. It is essentially a measure of the fat-producing value of the food-stuff. The protein equivalent is the number of pounds of digestible true protein, plus half the number of pounds of non-protein nitrogenous substances such as amides, present in 100 pounds of the foodstuff. It is a measure of the value of the food-stuff to the animal as a source of protein.

By this method all foods can be reduced to comparable standards based on (1) the protein equivalent, and (2) the starch equivalent.

The next stage in comparing values is to determine the cost of a unit of protein equivalent and of starch equivalent in the different foods which are being compared, and to enable the reader to do this the protein and starch equivalent figures for the different foods are given in the table on page 403, and also the cost per unit of protein equivalent and of starch equivalent in each case. These costs have been determined by dividing the protein equivalent figure and the starch equivalent figure, respectively, into the current price per ton, and the lower the quotient figures thus obtained the cheaper is the particular food as a source of protein or of starch equivalent as the case may be.

However, it would be quite misleading to compare the cost of a unit of protein equivalent in a protein food (which is purchased principally for its protein) with the cost of a similar unit in a starchy food. In other words, foods such as maize meal and pollard cannot be compared on the basis of cost of protein equivalent with foods such as decorticated cotton cake and meat meal.

The best course to adopt is to consider for what purpose the particular food is required, decide what foods are suitable for that purpose, examine the samples of these different foods which are offered and, if all appear to be satisfactory, apply the unit value system of determining which one provides protein equivalent or starch equivalent at the cheapest rate. A few examples may be helpful in explaining the procedure.

(1) Suppose it is intended to purchase a protein food for the purpose of balancing a ration for dairy cows. The protein foods suitable for dairy cows are decorticated cotton cake, decorticated earthnut cake and soya bean meal. From the table on page 403 it is seen that at the current average prices of these foods the cost of the unit of protein equivalent in each is as follows:—

Decorticated cotton cake	...	...	5/6d.
Decorticated earthnut cake	...	...	4/5d.
Soya bean meal	...	...	5/7d.

Accordingly decorticated earthnut cake is the cheapest source of protein.

(2) A protein food is required as a milk substitute to balance the ration for fattening pigs. The foods suitable for this purpose are soya bean meal, meat meal and meat and bone meal. Referring again to the table, it is seen that at the current average prices of these foods the cost of the unit of protein equivalent in each is as follows:—

Soya bean meal	...	...	5/7d.
Meat meal (60% protein)	...	...	5/6d.
Meat and bone meal (40% protein)	...		5/8d.

Therefore meat meal (60% protein) is the cheapest milk substitute for pigs at the present prices of purchased foods suitable for pigs. This example shows also how the price per ton may mislead a purchaser into thinking he is being economical when he buys at the cheapest price. The 60% meat meal costs 4/11d. per cwt. more than the 40% meat and bone meal, and yet it is a cheaper source of protein than the latter. Besides, a lesser proportion in the meal mixture will suffice, and having usually a lower content of oil than the 40% grade, it is likely to prove more satisfactory than that grade both from the thriving point of view and its effect on the quality of the bacon.

(3) Whether is it more economical to feed white pollard than brown pollard or white bran than red bran, even though the prices per ton of the white grades are higher than those of the brown or red grades? The figures in the table show that the cost of both the unit of protein equivalent and of starch equivalent is less for the brown pollard than the white, and less for the red than the white bran. It follows, therefore, that at current prices the coloured grades of pollard and bran are cheaper than the white grades. It should be remembered in this connection, however, that the comparison of costs in these cases has been made on the assumption that the composition of the coloured grades is the same as that of the white grades. A pollard containing say, 8 per cent. fibre, even if of a white colour, would have a far lower feeding value than one containing only 4 per cent. of fibre. Colour is not a guide as to the feeding value of pollard or bran.

PRICES OF FERTILISERS AT SPECIFIED CENTRES.

The following table shows the retail cash prices per ton of fertilisers at 1st November, 1938, at representative centres in Northern Ireland.

	Antrim	Armagh	Ballymena	Belfast	Castlewellan	Coleraine	Dungannon	Enniskillen	Omagh	Strabane
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Nitrogenous Manures :										
Nitrate of Soda (15.5% N.) ..	8 5 0	—	—	8 0 0	—	9 0 0	—	—	—	—
Sulphate of Ammonia (20.6% N.)	8 0 0	8 5 0	—	7 15 0	8 0 0	7 15 0	7 15 0	8 7 6	8 0 0	8 10 0
Nitro Chalk (15.5% N.) ..	8 5 0	—	—	7 10 0	8 5 0	8 0 0	8 2 6	8 5 0	8 10 0	8 10 0
Phosphatic Manures :										
Superphosphate (16% S.P.A.) ..	—	—	—	3 15 0	—	3 15 0	—	4 2 6	4 2 6	4 10 0
Semsol (5% S.P.A., 15½% P.A.)	3 10 0	—	3 5 0	2 17 6	3 5 0	3 5 0	3 7 6	3 10 0	3 8 9	3 10 0
*Basic Slag (16% to 17% P.A.) ..	—	—	—	2 18 0	—	—	—	—	—	—
Basic Slag (18% to 20% P.A.) ..	—	—	—	3 6 0	—	—	—	—	—	—
Gafsa Rock Phosphate (26% P.A.)	3 5 0	—	3 0 0	2 12 6	3 0 0	3 0 0	3 0 0	3 5 0	3 6 3	3 5 0
Potash Manures :										
Kainit (14% P.)	3 12 6	—	—	3 2 6	—	—	3 10 0	—	3 12 6	3 10 0
Potash Salts (20% P.) ..	4 10 0	—	—	4 0 0	—	4 5 0	4 5 0	—	4 10 0	4 10 0
Potash Salts (30% P.) ..	5 15 0	—	—	5 5 0	—	—	5 12 6	5 16 6	5 15 0	5 17 6
Muriate of Potash (50% P.) ..	8 17 6	—	—	8 10 0	—	8 10 0	8 15 0	—	—	9 0 0
Agricultural Salt	2 10 0	—	—	3 0 0	—	—	3 0 0	—	—	—

Abbreviations :—N.—Nitrogen. S.P.A.—Soluble Phosphoric Acid. P.A.—Phosphoric Acid. P.—Potash.

*If obtained under the Land Fertility Scheme, the price of British made basic slag will be 25 per cent. less than the figures quoted, since a subsidy equivalent to one-quarter is payable. The price for British basic slag, c.i.f. Belfast and Londonderry are fixed by the Land Fertility Committee and are the same at both these ports. The retail prices at Belfast given above are based on these c.i.f. prices plus the charges approved by the Committee for unloading and distribution. The prices at other centres will be the price at Belfast or Londonderry plus the carriage from the port to the particular centre.

TRADE AND PRICES OF LIVE STOCK AT BELFAST AUCTION MARTS.

Supplies of fat cattle at the Belfast auction marts last month showed further seasonal increases, but prices, although remaining fairly consistent throughout the month, were below those paid in September, and on average were reduced by 1/6d. to 32/- per live cwt. Trade continued fairly steady all month despite the heavy supplies, and good clearances were effected at prices which fluctuated within narrow margins. Best cattle made up to 36/6d. per live cwt. Good commercial cattle generally ranged in price from 30/- to 35/-, while rougher types in some cases fetched as low as 28/- per live cwt.

At the first sale day in November there was a considerably increased number on offer. Trade for these was fairly keen, and prices appreciated.

The following table shows the average prices of fat cattle during the past five weeks compared with the corresponding dates in 1937.

Week ended	*per cwt.*	*Week ended*	*per cwt.*
8th October, 1938	32/6	9th October, 1937	37/–
15th „ „ ..	31/9	16th „ „ ..	36/6
22nd „ „ ..	32/–	23rd „ „ ..	36/3
29th „ „ ..	31/6	30th „ „ ..	35/6
Average for month	32/–	Average for month ..	36/3
5th November, 1938	32/–	6th November, 1937	35/6

Supplies of store cattle were also very considerably increased. Trade all month was only fair, but the quality of the stock remained consistently good. The average quotation for the month showed some improvement, and was almost up to the level of August. Good forward cattle made as much as £15, with good smaller animals at from £9 to £12 10s. 0d. per head. Rougher types of small cattle and calves fetched from £6 to £9 per head.

Dairy cattle were also in heavier supply and generally dearer than in September. Trade encountered a slight setback about the second week of the month, but on the whole business in this section was satisfactory. Best quality cows fetched an extreme top price of £30, and the general range for good stock was from £21 to £28 15s. 0d. per head. Fresh useful cows made from £16 to £22, and aged and rougher sorts from £10 upwards.

Supplies of sheep and lambs last month were seasonally reduced. The quality of the stock generally was very good, and prices on the whole showed some improvement. Fat sheep and lambs comprised the bulk of the supply. At the seasonal sales of breeding sheep held during the month business was very active, especially for the best types of black-faced ewes and Border-Leicester rams, and anything of a good-quality animal met a firm demand. As in the case of other sheep, prices for these were appreciably cheaper than at the corresponding sales a year ago.

Price ranges for store cattle, dairy cattle and sheep, during each week of the month are shown in the table on the next page.

PRICES OF OTHER STOCK AT THE BELFAST AUCTION MARTS.

Description.		Week ended 8-10-38	Week ended 15-10-38	Week ended 22-10-38	Week ended 29-10-38
Fat Cows	Range of 1st quality	£14 to £17	£13 to £16-10	£11 to £16	£12 to £15-5
	,, 2nd ,,	£10 to £15	£6 to £13	£3 to £11	£6 to £11-10
Store Cattle :					
Forward Stores	Range of 1st quality	£13-10to£15-2-6	£13 to £14-7-6	£12-10 to £14	£13-10 to £15
	,, 2nd ,,	£12 to £13	£11-5 to £12-10	£8-15 to £12-5	£11-10 to £13-10
Calves (under 12 months) ..	,, 1st ,,	£9-5 to £11-15	£8-15 to £10-15	£9-5 to £10-10	£7-15 to £10-10
	,, 2nd ,,	£6 to £8-10	£6 to £8-10	£6 to £8-10	£5-12-6 to £7
Dairy Cattle :					
Milch Cows	Range of 1st quality	£23 to £28-15	£22 to £30	£22 to £30	£23 to £30
	,, 2nd ,,	£18 to £22	£17 to £21	£17 to £21	£17 to £22
Springers	,, 1st ,,	£22 to £27-10	£21 to £27-15	£20 to £27-15	£21 to £26
	,, 2nd ,,	£17 to £21	£17 to £20	£16 to £19	£17 to £20
Sheep and Lambs :					
Crossbred & White Ewes ..	Range of 1st quality	27/– to 37/–	26/– to 39/6	26/– to 32/6	28/– to 36/–
	,, 2nd ,,	20/– to 29/–	22/– to 33/–	20/– to 26/–	22/– to 29/–
Blackface Ewes	,, 1st ,,	20/– to 27/6	20/– to 30/–	20/– to 25/6	20/– to 31/–
	,, 2nd ,,	14/– to 21/–	15/– to 21/–	15/– to 20/–	15/– to 24/–
Crossbred and White Lambs ..	,, 1st ,,	29/– to 39/–	30/– to 40/–	25/– to 36/6	28/6 to 36/–
	,, 2nd ,,	23/– to 29/–	20/– to 29/–	16/– to 27/6	18/– to 29/–
Blackface Lambs	,, 1st ,,	16/– to 19/–	18/– to 21/6	14/– to 16/–	16/– to 20/–
	,, 2nd ,,	13/– to 16/–	12/– to 17/–	10/– to 13/–	11/– to 13/6
Crossbred & White Hoggets ..	,, 1st ,,	28/– to 35/–	28/– to 36/–	26/– to 31/6	28/– to 38/–
	,, 2nd ,,	24/– to 27/–	24/– to 27/–	22/– to 25/–	24/– to 27/6
Rams	,, 1st ,,	30/– to 40/–	28/– to 40/–	32/– to 50/–	30/– to 45/–
	,, 2nd ,,	24/– to 32/–	24/– to 32/6	20/– to 32/6	28/– to 39/–

PRICES OF LIVE STOCK.

Average prices of Live Stock at Fairs during the month of October, 1938.

Date	Fair	Calves (under 9 months)	Store Cattle	Fat Cattle (18 months and over)	Springers		Milch Cows	Fat Lambs (under 12 months old)	Breeding Ewes	Young Pigs
					Cows	Heifers				
		Per head £ s.	Per cwt. Live weight	Per cwt. Live wgt.	Per head £ s.	Per head £ s.	Per head £ s.	Per head £ s.	Per head £ s.	Per head £ s.
4	Omagh	6 0	37/6 to 40/–	31/6	17 0	17 0	15 15	†1 7	†1 10	—
5	Rathfriland ..	6 9/8	32/– to 37/6	32/–	18 15	17 10	17 10	†1 1/6	‡1 8/6	1 10
								‡0 15		
6	Ballymoney ..	6 5/4	35/– to 38/6	—	18 0	16 0	15 5	†1 2/6	—	1 10
6	Strabane	5 0	37/– to 40/–	31/–	15 10	—	—	†1 5	†1 15	—
7	Moy	—	32/– to 38/–	31/–	16 15	16 5	16 12/6	†1 6/3	†1 7/6	—
									‡1 0	
8	Irvinestown ..	6 10/8	36/– to 38/6	31/–	16 10	16 0	15 10	*1 5	*1 10	1 12/6
								†1 7	†1 6	
10	Enniskillen ..	6 0	33/– to 36/–	30/6	16 10	15 10	16 0	*1 6	*1 8	1 14
10	Limavady	—	32/– to 38/–	33/–	19 0	17 0	—	—	†1 10	1 7/6
									1 2	
12	Crossgar	—	34/– to 38/–	—	18 10	17 0	16 10	—	—	2 0
12	Kilrea	5 6	30/– to 40/–	32/–	20 0	19 0	18 0	†1 5	—	1 10
14	Ballygawley ..	—	38/– to 42/–	29/–	17 0	—	15 15	—	†1 12/6	1 15
15	Portadown	5 13/4	36/– to 38/–	29/–	19 0	16 0	17 0	—	—	1 15
17	Camlough	5 10	34/– to 42/–	31/–	18 0	17 0	14 0	†1 2/6	—	—
17	Londonderry ..	—	31/– to 35/–	—	18 5	16 5	—	—	—	—
18	Claudy	—	31/– to 35/–	32/–	17 5	12 0	—	—	—	1 8
19	Lisnaskea	5 6/8	30/– to 35/6	32/6	16 0	16 0	15 0	—	—	1 15
20	Ballynahinch ..	—	35/– to 37/–	—	19 0	16 10	17 15	†1 6	†1 15	2 0
21	Moneymore ..	7 0/10	33/– to 39/–	29/–	16 0	15 5	20 0	†1 4/6	†1 14	1 15/6
22	Fintona	6 16/8	35/– to 40/–	30/–	16 0	15 0	15 0	†1 7/6	†1 12/6	1 14
27	Antrim	6 9/2	32/6 to 35/–	30/–	25 0	19 0	—	—	—	1 10
28	Castlederg	5 0	35/– to 38/–	30/6	12 10	—	—	†1 7/6	†1 10	1 10
									‡0 18	
28	Killylea	—	32/6 to 38/–	31/–	14 0	—	12 10	—	†1 16/6	—
29	Ballymena	5 13/2	27/– to 41/–	—	22 10	20 0	20 0	—	—	1 15

*Long Wool. †Downs and Crossbred. ‡Mountain.

SHIPMENTS OF LIVE STOCK.

Statement showing the Shipments of Live Stock from Northern Ireland ports during the following periods :—Months of October, 1938, September, 1938, October, 1937; Ten months ended 31st Oc tober, 1938, and 31st October, 1937.

PORTS OF :—	CATTLE.						SHEEP.				PIGS.			Horses
	Fat	Stores	Milch Cows	Springers	Calves	Total	Fat	Stores	Lambs	Total	Fat	Stores	Total	
Belfast	4,469	11,966	1,894	95	—	18,424	10,497	—	—	10,497	4,102	—	4,102	64
Larne	—	974	—	38	—	1,012	5,444	—	—	5,444	992	54	1,046	31
Londonderry ..	281	8,032	89	124	147	8,673	5,576	—	—	5,576	764	—	764	4
Newry	—	103	—	—	—	103	473	—	—	473	—	—	—	—
Total, October, 1938 ..	4,750	21,075	1,983	257	147	28,212	21,990	—	—	21,990	5,858	54	5,912	99
Total, September, 1938	4,318	14,157	1,982	277	96	20,830	23,961	118	4,144	28,223	7,898	179	8,077	105
Total, October, 1937 ..	3,919	13,436	2,030	150	237	19,772	9,493	55	—	9,548	6,918	81	6,999	123
Total, Ten months ended 31st October, 1938	46,283	136,889	14,442	1,997	3,036	202,647	60,437	118	78,514	139,069	70,739	1,787	72,526	2,277
Total, Ten months ended 31st October, 1937	48,094	160,447	15,324	1,994	3,774	229,633	43,043	391	78,398	121,832	108,153	2,534	110,687	2,834

IMPORTS AND EXPORTS.

Table showing the Imports and Exports through Northern Ireland ports of certain Agricultural Products during the month ended 30th September, 1938, and the nine months ended 30th September, 1938, with comparative figures for the corresponding periods in 1937. This information also includes trade with Eire across the land boundary.

(These figures are supplied through the courtesy of the Ministry of Commerce and are subject to revision).

COMMODITY.	IMPORTS				EXPORTS.			
	Month ended 30th September.		Nine Months ended 30th September.		Month ended 30th September.		Nine Months ended 30th September.	
	‡1938	1937	‡1938	1937	‡1938	1937	‡1938	1937
Bacon .. .. cwt.	1,635	3,826	32,573	28,943	45,215	45,318	294,290	274,427
Hams .. .. ,,	1,325	1,797	12,595	14,042	13,958	11,323	105,922	91,014
Pork .. .. ,,	—	250	705	4,056	2,882	2,513	22,761	25,252
Butter .. .. ,,	4,143	18,955	138,786	165,056	290	563	3,015	2,723
Eggs .. gt. hds.	8,520	52,127	811,079	774,985	302,145	299,151	2,955,645	2,896,986
Oat Products (inc. Oatmeal) cwt.	3,476	2,156	18,361	18,185	2,765	4,092	35,239	58,495
Potatoes .. .. tons	—	—	2,584	6,042	*913	*1,393	*128,830	*137,849
Poultry .. .. cwt.	—	143	1,530	2,370	15,040	14,862	132,596	143,635
Grass Seeds .. .. ,,	637	170	15,112	6,909	5,625	4,042	254,482	239,480
Cream .. .. galls.	—	—	—	—	†28,416	†38,060	†217,531	†485,759

* These figures represent the quantities of potatoes inspected by the Ministry of Agriculture for shipment.

† These figures are compiled from the Monthly Trading Returns supplied by Creameries in Northern Ireland.

‡ These figures do not include direct trade with places abroad.

ACCOUNT OF TRADE AT FAIRS.

Supplies of store cattle at fair centres last month were considerably increased, and although the demand remained dull throughout a fair amount of business was transacted. Forward cattle usually found a ready sale at prices well up to the levels of a month ago, but on the whole stock was more difficult to clear and prices declined. Well-conditioned polly bullocks were an attraction, as also were nice young heifers for breeding. The condition and quality of the stock generally were maintained at a fairly high level.

Fat cattle continued in fair supply throughout the country. The animals were well finished and of a good standard of quality, the majority of the stock being very suitable for commercial purposes. Prices, however, were not maintained at the levels of a month ago. Well-finished medium-weight polly bullocks were again the best trade at around late rates.

Dairy cattle were also in heavier supply at fairs. The majority of the animals were sold without any difficulty, and previous prices were well maintained with the exception of poorer qualities, which were neglected. Ready milchers fetched high prices, as did also nice young springing heifers. Rough types of dairy cows and those with bad udders were unsold.

The numbers of sheep and lambs showed seasonal reductions, and a fair trade was done at prices similar to those obtaining a month ago. Good breeding ewes were in seasonal demand at cheaper prices than in October, 1937. Cross-bred fat lambs, showing quality and finish, also met a fairly ready sale at late rates.

Normal supplies of young pigs met a further improved demand, and clearances were effected at most centres at prices that again tended to rise on the month. Trade in store pigs moved similarly. Small numbers of brood sows met a good demand for the best, especially Yorks and York crosses. The general price range was from £6 to £10 10s. 0d. per head.

Table showing the numbers of Live Stock (1) exposed for sale, and (2) sold at 21 fairs in Northern Ireland during the months of October and September, 1938, and October, 1937.

Description of Live Stock	October, 1938.		September, 1938.		October, 1937.	
	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.
Store Cattle ..	9,163	5,387	7,237	4,168	9,420	5,704
Fat Cattle ..	1,434	1,151	1,568	1,381	1,481	1,195
Dairy Cattle ..	1,710	1,291	1,441	1,168	1,483	1,131
Sheep	1,947	1,433	2,037	1,187	2,598	1,915
Lambs	2,045	1,368	4,643	3,107	2,484	1,587
Young Pigs ..	3,451	2,824	3,411	2,793	3,137	2,552

10th November, 1938.

This report is issued free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

MINISTRY OF AGRICULTURE.

List of Leaflets and other Publications.

LEAFLETS.

No. 1. Flax Seed
" 2. Improvement of Farm Poultry.
" 3. Feeding for Egg Production.
" 5. The Dishorning of Calves.
" 6. The Packing of Apples in Standard Boxes.
" 7. Potato Trials.
" 9. The Renovation of Orchards.
" 10. Fruit Tree Pests—Capsid Bugs.
" 11. Fruit Tree Pests—Aphides and Apple Sucker.
" 12. Fruit Tree Pests—Caterpillars.
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" 14. Cheese-making on the Farm.
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" 23. The Handling and Care of Wool.
" 24. Fluke in Sheep.
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" 26. Ordnance Survey Maps for Farmers.
" 27. How to Keep Eggs Clean.
" 28. The Construction of a Laying House for Poultry.
" 29. The Selection and Breeding of Laying Hens.
" 31. Coccidiosis in Poultry.
" 32. Roup of Poultry (Fowl Pox).
" 33. Spraying Calendar for Apple Orchards.
" 34. The Pruning of Apple Trees.
" 35. The Fattening of Pigs.
" 36. Advantages of Milk Recording.
" 37. The Raising and Fattening of Turkeys.
" 38. The Destruction of Charlock.
" 39. The Production of Clean Milk.
" 40. The Laying Down and Management of Temporary Pastures.
" 41. Blackleg, Blackquarter or Quarterill.
" 42. The Purchase of Balanced Rations for Dairy Cows
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" 44. Results of Crop Experiments.
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" 54. The Breeding and Rearing of Calves.
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" 57. How to have Eggs of First Quality.
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" 59. Bacillary White Diarrhoea (Pullorum Disease).
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" 62. The Production of Timber on the Farm.
" 63. Sheep—Castration, Docking, Foot-Rot and Care of Feet.
" 64. The Destruction of Warble Fly Maggots in Cattle.
" 65. The Packing of Apples in Barrels.
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CIRCULARS.

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" 9. Smut in Oats.
" 10. Purchase of Fertilisers and Feeding Stuffs.
" 11. Fertilisers and Feeding Stuffs Act—General Summary.
" 12. The Treatment of Liver Fluke.
" 13. The ox-Warble Fly.
306. Fertilisers and Feeding Stuffs Act, 1926—Revision of Regulations.

MISCELLANEOUS PUBLICATIONS.

Store Cattle.
Reports on Egg-Laying Tests.
Crop Insurance.
List of Growers of Certified Crops of Immune Varieties of Potatoes.
List of Growers of Certified Crops of Non-Immune Varieties of Potatoes.
The Ministry's Monthly Report.
Register of Premium Stallions.
Guide to the Live Stock Breeding Act (Northern Ireland), 1922.
Guide to the Marketing of Fruit Act (Northern Ireland), 1932.

Any of the above publications may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

The following publications can be obtained from His Majesty's Stationery Office, 80 Chichester Street, Belfast, at the prices stated :—

(1) The Annual Report of the Ministry of Agriculture for Northern Ireland. Price 2/6 net.
(2) Annual Report upon the Agricultural Statistics of Northern Ireland. Price 2/- net.
(3) The Journal of the Ministry of Agriculture for Northern Ireland. Price 2/6 net.
(4) The Agricultural Output of Northern Ireland, 1925. Price 2/6 net.

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